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Physical Therapy Assistance for Poliomyelitis Cases in Greece — BENDURE

Organization of an In-Service Training Program in a Physical Therapy Department — HUPPERT

Physical Therapy in a Small General Hospital — BROWN

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27th Annual Conference of the
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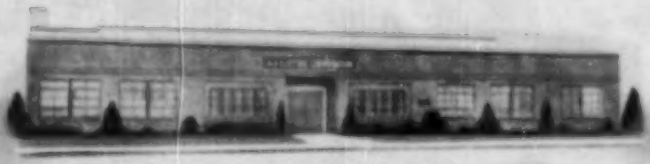

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Table of Contents

Physical Therapy Assistance for Poliomyelitis Cases in Greece—Mary L. BeaDure 171

Organization of an In-Service Training Program in a Physical Therapy Department—Curtis B. Huppert 174

Ethics—Theodore Marton 178

Physical Therapy in a Small General Hospital—Thelma Brown 179

Physical Therapy in the Psychiatric Field . . . 180

Reprints Available 182

Schools Approved for Training Physical Therapists 183

Editorials—27th Annual Conference 184

Association Activities 189

Membership News 193

General News 194

Coming Meetings 195

Index to Current Literature 195

Abstracts 197

Book Reviews 212

Meet Our New Contributors 214

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The Physical Therapy Review

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Physical Therapy Assistance for Poliomyelitis Cases in Greece

Mary L. BenDure, Captain, WMSC

On November 14, 1949, the Public Health Division of the Economic Cooperation Administration Mission to Greece was called upon to assist in the care of poliomyelitis patients at the Children's Hospital, St. Sophia, in Athens. This hospital is the only pediatric teaching center in Greece. Student nurses from the three schools of nursing in the country affiliate here as well as the students from the two schools of midwifery in Athens. By November 15th four deaths had occurred and thirty cases had been admitted to the hospital. The need for additional hospital beds was imperative and through the cooperation of the hospital staff, the Ministry of Hygiene and the Economic Cooperation Public Health personnel, the newly completed surgical-orthopedic wing was equipped with beds and the necessary hospital supplies for opening this seventy-bed wing. The two operating rooms and cast room were utilized as wards. All cases of poliomyelitis were transferred to this department and a pediatrician, Dr. Athamassiadis, and an orthopedist, Dr. Katsaris, were assigned, the latter having spent eight years in the United States observing and practicing medical procedures. While the nursing requirements and teaching of bedside care could be met by the Nursing Division of Economic Cooperation Public Health, the need was felt for the immediate assistance of a trained physical therapist. Dr. O. F. Hedley, Director of the Public Health Division, requested through General Van Fleet a trained physical therapist from the Chief Surgeon, European Command. I arrived in Athens November 23rd, by which time six fatalities had been recorded and seventy cases had been admitted.

The diagnosis of poliomyelitis was made from history, clinical findings and symptoms, and examination of spinal fluid. For research purposes blood was extracted from a vein, routinely and frequently. Vitamins were administered intramuscularly into the lateral mid-thigh as the nurses were not permitted to use the buttocks "lest they hit the sciatic nerve." It appears that most medications in Greece are given hypodermically.

Two portable respirators were made available through Economic Cooperation Administration funds. The respirator, plus oxygen, was used on two cases during my stay, but we failed to save the lives of the patients. One of the cases was cyanotic upon admission and died shortly thereafter. A third death occurred, not due to respiratory involvement but to complications.

Records maintained on each patient revealed only the date of onset, date of admission, daily temperature, number of vitamin units received, and the date of discharge from the hospital.

Two double-burner hot-plates, two boilers, two wringers, and blankets were obtained and Carrie M. Dokken and Doris M. Jacobs of the Nursing Division, Economic Cooperation Public Health, in-

structed the practical nurses in the proper cutting and application of hot, moist packs to relieve muscle spasm and pain in addition to the general nursing care of these patients. Due to a poor supply of electricity only one hot-plate could be utilized. This factor, plus the lack and inexperience of personnel, resulted in only one application of hot packs daily; one pack consisted of three changes at twenty-minute intervals. It was a constant struggle to keep the trained ones on "packing" and we did not always succeed. It was impossible to put across the idea that this was only a temporary emergency and allowance should be made in the rotation of personnel. Since muscle spasm and pain were still present, it was too early to initiate re-educational exercises. I spent the first week assisting Miss Jacobs in the teaching of the application of hot packs, proper position and alignment of the patient and the prevention of bed sores. Corrugated boxes were used as footboards and to relieve the pressure of blankets on the feet. With cooperation of the doctors, a careful examination for muscle spasm and weakness was made on each patient and the area to receive hot packs was written in Greek and English on adhesive tape on the foot of the bed. A few of the patients had no apparent muscle spasm nor muscular weakness, and a few others showed facial involvement only. These were concentrated in two wards to facilitate the application of hot packs in the other four wards.

Figure 1. Testing for quadriceps weakness

Figure 2. Instructing Miss Megalou, Greek physical therapist, in testing the gluteus medius muscle.

As the muscle spasm decreased, a requisition was made for personnel to be instructed in performing muscle tests and re-educational exercises. An unoccupied ward was transformed into a physical therapy clinic equipped with two tables covered with blankets, rubber sheets and sheets, a litter for transporting patients, and a table. Through the Ministry of Hygiene two physical therapists were borrowed from the Near East Foundation Rehabilitation Center for half-days Monday through Friday. Most fortunately they had had good training and background and in addition had been trained by American physical therapists. Philomila Mavridou graduated in 1930 from a three-year course at the Red Cross School of Nursing and five years later had a one-year course in Public Health Nursing in Toronto, Canada. In 1939 she went to the United States and completed the course in physical therapy conducted by Harvard Medical School in Boston. Last year she spent six months in London observing physical therapy activities. Mary Megalou graduated from the Academy in Greece in 1936 and the following year completed the course in physical therapy sponsored by the Near East Foundation and conducted by Helen Kaiser of Duke University. I was pleased to see that Miss Mavridou used "Muscle Testing" by Daniels, Williams and Worthingham, which is an excellent guide as it shows the proper position for testing individual muscles. They obtained a supply of muscle-test forms used at the Near East Foundation which are printed in Greek on one side and English on the other. This form is fairly complete but groups some muscles that we examine individually. Since the "opponens pollicis" was omitted

in the Greek printing, they were instructed to add this muscle to each chart. Muscle strength was graded on the six-point scale—zero, trace, poor, fair, good, and normal. Measurements recorded were: length of leg, circumference of thigh, calf, upper arm, and forearm. Also contractures and deformities were noted and recorded. Upon completion of a muscle test a clinic card was completed giving name, age, date of onset, and a list of the exercises required for that child. The first two days the physical therapists gave muscle tests as prescribed by the doctor. Without a knowledge of the language it was impossible for me to assist by doing muscle tests which resulted in my observing, suggesting, and answering questions. After that, daily exercises were given and the remaining time was spent performing new muscle tests.

Although we had the cooperation of the doctors in retaining for treatment those with muscular weakness, many parents would demand release of the child when the acute phase had passed. Statements were signed by the parents to the effect that the patient was discharged against medical advice. There is a definite need for an educational program to inform the lay public on the care and treatment of poliomyelitis cases. Some of the parents received instruction in exercises for the child. We only hope the exercises will be carried out.

By the third week hot running water and two bathtubs were made available and warm baths were instituted on a few children. To a Greek child this much water was terrifying, and in the beginning, of no assistance to relaxation. As muscle spasm disappeared, the orthopedist applied lightweight, posterior plaster casts for support where needed.

Figure 5. Greek nurse admiring corrugated box for proper foot support.

By December 14th, 154 patients had been admitted to the hospital; fifteen were seen as outpatients but not admitted and eight fatalities were recorded. Most of the patients were from Athens and Piraeus with a few isolated cases from other areas. The ages of the children ranged from four months to thirteen years with one twenty-year-old in another hospital. The largest age group was four to five years. Of the 154 admitted, ten had no apparent muscular weakness and nine had facial involvement only.

The Greek people, including the doctors and nurses, were disturbed by this outbreak of polio, but the disease has occurred before as demonstrated by the chronic cases seen in orthopedic and rehabilitation centers. They apparently are not overly concerned by the fact that last year they had 1272 cases of diphtheria (55 fatal) and 5046 cases of typhoid (86 fatal), according to the 1948 Public Health Division annual report.

A great deal of credit is due to the Nursing Division of Public Health for their prompt assistance in training and supervising personnel and obtaining supplies to meet this emergency. By reallocating other duties, time allowed concentration on this urgent project. The Public Health Division of Economic Cooperation Administration in Greece consists of twelve commissioned officers loaned by United States Public Health Service—four doctors, four sanitary engineers and four nurses. The Nursing Division is headed by Carrie M. Dokken who is assisted by Margaret Willhoit, Doris M. Jacobs and Jeannette Potter. Their function is to establish an effective Nursing Section in the Ministry of Hygiene. A Chief Nurse position has been established and a Nurse Practice Act was passed in 1948 giving a fairly satisfactory status to professional nurses. Nursing education is being sponsored by aids to enlarge the present schools of nursing and establish new schools. The quality of nursing service is being improved by in-service training for the untrained practical nurses who render almost all of the nursing care in the country. This project is carried out by four Greek graduate-nurse instructors who are paid from Economic Cooperation Administration funds. To date, 932 practical nurses have been trained. An Army Nurse Corps training school has been established in one of the Greek Military Hospitals in Athens. An attempt is being made to obtain the passage of a bill establishing a Royal Army Nurse Corps in

the Greek National Army. This Division also has spent considerable time trying to publicize the need for preventive medicine and immunizations. Due to the large number of refugees that were present because of the Civil War in Greece, a great need existed to prevent and control epidemics. Since they were concentrated in refugee centers some education and immunizations were accomplished.

During my stay in Greece I had the opportunity to visit a Greek Military Hospital, Crippled Children's Clinic, and the Rehabilitation Center, observing physical therapy activities.

With my departure I felt that the physical therapists could adequately follow through the convalescent stage and rehabilitation period of the poliomyelitis cases if cooperation of the parents with the medical personnel could be obtained.

Organization of an In-Service Training Program in a Physical Therapy Department

Curtis R. Huppert

In every large physical therapy department there exists a need for an in-service training program. This need for additional training of qualified therapists is necessitated by such factors as the turnover of personnel, the introduction of recent graduates into an existing, professional, clinical set-up, the teaching of special technics and therapies which are not commonly used in the average hospital, and the need for an understanding of the integration of physical therapy with the other phases of medical rehabilitation and the hospital as a whole.

In general, there are three groups of physical therapists who will benefit by taking part in an in-service training program. There is the recent graduate who is just entering the profession, the experienced physical therapist who has been in the field of specialization, and the so-called "old-timer" who has had limited training.

Recent graduates of approved schools often bring with them a wealth of theoretical knowledge and a good understanding of the physiological factors involved in the treatment of disease, injury, or disability by physical means, but frequently they lack clinical experience.

Recent graduates have to be introduced to the profession with a more practical point of view than was gained during their training period. They have to be indoctrinated into an existing set-up and have to learn to adapt and adjust to a new environment. There must be a deep appreciation for the position of a new therapist and an understanding of the anxiety that one experiences in the acceptance of a new position in a new field of activity.

One will encounter physical therapists who have been in the field of specialization for many years and who have lost sight of the fact that physical therapy with its numerous modalities has entered into many fields of the medical profession and has become an accepted therapeutic, diagnostic, and prognostic measure. Many of these physical therapists have never acquired, or, if so, have forgotten the use and application of some of these measures for definitive treatment.

The third group of physical therapists who enter the picture are the so-called "old-timers" whose original training was not equal to the present standards. Many of them have excellent experience as far as the application of modalities is concerned, but lack an understanding of the underlying physiological changes that occur during the application of these measures. Often, they are poorly trained in the administration of therapeutic exercises, the

Now a research physical therapist at New York University, Mr. Huppert was until recently, Chief of the Physical Therapy Department, at the Halloran Veterans Administration Hospital, Staten Island, New York.

performance of manual muscle tests, and electrodiagnostic procedures. Many of these physical therapists, due to social conditions, have never been able to get away from their jobs for the purpose of taking refresher courses, nor have they made a particular effort to supplement their knowledge by self-study of newer and more progressive phases in the field of physical medicine. They should be encouraged to take part in an accredited physical therapy curriculum during the evening hours. An attempt should be made to permit them to substitute other pertinent subjects for the clinical training period in view of the fact that they have been engaged in practical clinical work for so many years.

From the above, one can readily see the need for conducting an in-service training program. Reports from departments, where all physical therapists take an active part in the program, indicate favorable results as far as the standard of technics and the intelligent application of physical therapy are concerned. It also creates an understanding for the necessity of proper integration of the services of the physical therapy department with all other professional services of the hospital.

In larger physical therapy departments, such as are in existence in Veterans Administration hospitals, the chief physical therapist is responsible for the proper conduct of the in-service training program. He in turn delegates some of this responsibility to section supervisors who are in charge of those assigned to such sections as the T.B. wards, the orthopedic division, the paraplegic section, the main clinic, etc. An in-service curriculum is set up, outlining the topics to be discussed, the modalities to be demonstrated, the procedures to be instituted, the assignments to be given, the time and duration of each lecture, and the teaching aids to be used for the purpose of instruction. In addition, a tentative schedule of films and slides to be shown and a list of possible speakers and their topics are drawn up.

After this in-service curriculum has met the approval of the physiatrist in charge of the physical therapy department, the program is ready for initiation and a schedule of lectures is posted on the bulletin board of the department.

The last hour of the working day is the most practical time for class instruction. In order that larger physical therapy departments may not be deprived of all the staff at any one time, it is suggested that the in-service training program be given to different groups of physical therapists each day. One group may consist of recent graduates, another of all other staff physical therapists, and a third, of section supervisors. In addition to the above, the section supervisors, who have had specialized training, may hold in-service training sessions for staff members under their supervision.

Every large physical therapy department should have a room set aside for class use. This room should be large enough to seat all the therapists comfortably and give them a clear view of the instructor, blackboard, and demonstration area. The room should be well-lighted and ventilated.

Besides the usual classroom chairs and blackboard, there should be in the room anatomical charts, motor-point charts, and a skeleton. A plinth for demonstration purposes is also essential. A slide projector and a 16mm. film projector together with a projection screen should be available.

Attendance at in-service training classes is mandatory for all personnel, and is checked on the training course record. Notebooks are issued and it is required that all pertinent information be recorded for future reference.

As mentioned above, a special time must be set aside for instruction and preparation for such instruction. The teaching personnel must be given sufficient time to gather illustrative material, visual aids, references, etc. There should be no interruptions, conferences, or other activities which would interfere with the classroom routine. The chief physical therapist and the section supervisors should be well in advance of the staff members in their knowledge of the clinical subjects they teach.

In organizing the subject matter for most effective presentation, one has to take into consideration the correct order of introducing information. It is wise and time-saving to start with what the group or individual already knows as a base and then make each addition in terms of the material previously presented. Most recently graduated physical therapists have a fair background of information which can be adapted and varied so that it can be put into immediate practice. With the ever-present shortage of personnel and the steadily increasing demand for physical therapy by the medical staff, maximum utilization of all becomes a responsibility of the chief of the department. He and the section supervisors have a wide variety of instructional technics at their disposal, of which the most common are lecture, discussion, demonstration, recitation, reading, visitations, ward rounds, the presentation of audio-visual aids, drill, and combinations of these technics.

The in-service training program has as its main objective the education, training, and re-training of physical therapists in order to better their work-

performance, to create an intelligent understanding of the principles involved in the application of therapy, and the development of a professional sense of responsibility and medical ethics.

The art of administering physical therapy is developed by repeated practice in conformance with developed standards and rules based upon scientific research. A physical therapist should not be allowed to treat patients independently until he has acquired a minimum safety level of skilled performance. Under close supervision, he will quickly develop an understanding of principles and acquire technical skills such as are required in the administration of "special" therapies. In addition, as part of the in-service training program, he learns intellectual, executive, and social skills, such as are required in organizing his work, sizing up critical situations, understanding and handling difficult patients. Such insights and abilities are acquired by constantly meeting practical situations and cooperating with patients and fellow workers in the daily work in clinics and on wards.

The chief purpose of teaching in the practical situation is to help the physical therapist to integrate and apply his knowledge in administering increasingly better treatment to the patient for whose care he is responsible. The clinical teaching program should stimulate new physical therapists to adapt standard procedures and constantly increase their skill.

The activities relating to the in-service training program are usually under the supervision of the section supervisor, who must see that the patients are safeguarded and the physician's directives carried out, at the same time giving the physical therapist as much opportunity as possible to exercise initiative, to do his own thinking and evaluation, and to take responsibility for his own part of the treatment given to patients.

For the better orientation of new physical therapists to their jobs and to the work being done in all departments of the hospital, all who are newly employed are given an orientation and indoctrination course. This course consists of a tour through all the clinics of the physical therapy department, at which time they are introduced to all staff members and supervisors. This is followed by a tour through the other sections of the physical medicine service and the hospital as a whole. The new staff member is made aware of his responsibilities and is acquainted with the hospital personnel policy. Instructions as to the type of uniform to be worn are given, and the procedure to be followed in securing laundry service is explained. It is the duty of the section supervisor thoroughly to acquaint the new physical therapist with the procedures to be followed in writing progress notes and with all the forms used in the department. A lecture is given on professional ethics and on medical rehabilitation before patients are assigned. The above procedures are supplemented by written material and printed pamphlets.

The procedures used in the above mentioned orientation lectures may be illustrated by a sample lesson as it is given in our department.

LESSON ON MEDICAL ETHICS

A. *Definition*

Ethics (Medical Ethics) is the science of right conduct, also a system of rules regulating conduct. It teaches us how to judge whether given actions are right or wrong.

B. *Importance*

To treat a patient properly, for his own good as a patient, and, in keeping with his dignity, to treat him as an individual.

C. *Rules*

1. Carry out the doctor's orders.
2. Avoid criticism of the doctor's orders, with any other member of the hospital staff, in the presence of patients or other laymen.
3. Never mention or discuss a patient's behavior, symptoms, or diagnosis in the presence of a patient.
4. Tell the truth; if you make a mistake, tell your supervisor, not the patient.
5. Regard confidence as sacred.
6. Avoid intimacy with patients.
7. Avoid discussing religion, politics, or any other controversial subject with the patient.
8. Gain the patient's confidence by showing an interest in him (but do not engage in long conversations about his real or fancied troubles).
9. Be kind, gentle, courteous, at all times; but also be firm.

D. *Discussion*

One must impress physical therapists with the fact that the patient is the most important person in the hospital, and that all hospital personnel and all facilities must be utilized to their fullest capacity at all times to serve the patient and provide him with the best possible medical care. It is essential always to work in full cooperation with, and strictly adhere to the physician's orders and instructions regarding treatment of patients.

The qualities of patience, kindness, and helpfulness must be emphasized. A sympathetic, gentle attitude is most essential to success in working with patients. The ability to get along with every type of person is important, and is of utmost importance when treating those who are afflicted with physical or mental illness. It should be stressed that fairness and truthfulness are essential. Mistakes should not be evaded or covered up but must be faced, with the realization that anyone can make them, and then rectified, if possible.

A sense of loyalty must exist for the patient; he is hospitalized because of illness; everyone is striving to give him the best possible treatment and care to hasten his recovery.

The in-service training program for recent graduates consists of a one-hour lecture given weekly. The lectures are supplemented with printed material. Classes are conducted by the chief physical therapist. In addition, section supervisors are responsible for the proper practical application of the knowledge acquired in these classes.

Following is a list of topics that are presented to recent graduates in the form of lectures and demonstrations: goniometry, oscillometry, Landis-Gibbon Test (skin temperature test), cold pressor test, atrophy measurements, kinesiology and muscle testing, muscle nerve test (electrodiagnosis), medical diathermy, iontophoresis, massage, actinotherapy, sterile technic, recording of progress notes, and therapeutic exercises and muscle re-education.

Although this course is given primarily for the benefit of recent graduates, others who may feel a need for review are encouraged to attend. Also, a section supervisor who feels that any physical therapist under his supervision is in need of such review may request his attendance at any class.

Following is a list of topics given to section supervisors. Again, the course is conducted by the chief physical therapist. All section supervisors must attend and take careful notes on all information given, since it is their responsibility to put into effect all new technics and procedures discussed in these sessions. These meetings take place weekly.

- Pre- and post-operative thoracoplasty routine
- Cardiac exercise program
- Relaxation therapy
- Kabat-Kaiser technic
- Rehabilitation of lower extremity amputees
- Rehabilitation of upper extremity amputees
- Neurodermometry
- Fluorescine test
- Rehabilitation of patients with spinal cord injuries
- Other newly instituted technics and procedures
- Administrative procedures

The largest in-service training class, consisting of all physical therapists in the department, also meets once each week. These classes consist of lectures, discussions, films, demonstrations, and seminars.

The sectional classes meet twice weekly. These classes are conducted by the respective section supervisors. The material presented consists of information that was given to the supervisor at the class held the preceding week.

The lectures, discussions, and demonstrations should be supplemented by trips to other hospitals, installations, and rehabilitation centers. Special arrangements should be made to participate in seminars or postgraduate courses given in hospitals and colleges. All physical therapists should be encouraged to attend meetings of the American Physical Therapy Association and the Congress of Physical Medicine.

Every department should have in its possession a complete library of books and journals pertaining to physical medicine. A partial list is as follows:

- ARCHIVES OF PHYSICAL MEDICINE
- AMERICAN PHYSICAL THERAPY REVIEW
- AMERICAN JOURNAL OF OCCUPATIONAL THERAPY
- THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
- ELECTROTHERAPY AND LIGHT THERAPY by Richard Kovacs
- PHYSICAL MEDICINE by Frank Krusen
- TECHNIQUE OF ELECTROTHERAPY by Osborne and Holmquest
- PHYSICAL MEDICINE IN GENERAL PRACTICE by William Bierman
- PERIPHERAL NERVE INJURIES by Haymaker and Woodhall
- STEDMAN'S PRACTICAL MEDICAL DICTIONARY
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- REHABILITATION, RE-EDUCATION AND REMEDIAL EXERCISES by Olive Guthrie Smith
- HANDBOOK OF PHYSICAL MEDICINE
- PHYSICAL MEDICINE IN GENERAL PRACTICE by Arthur Watkins
- GRAY'S ANATOMY by Lewis

In addition, a file of pamphlets, reprints, and other educational material is kept in alphabetical order for the use of physical therapists in the department.

Within the limitations of this paper some of the procedures that can be followed in the institution of an in-service training program have been outlined. The objectives of this program will always be the same. The dimensions, however, will depend on the size of the department, the number of physical therapists, and the amount of time available for educational purposes.

Until the present physical therapy curricula in colleges are extended in time, and the periods of clinical practice are prolonged, there will always exist a need for an in-service training program. This need must be met, and can be met, by offering the best that the department can give. Physical therapists who have entered the profession recently are entitled to and must receive additional training. In return, they will be able to offer better service to the department and the hospital as a whole.

The failure or success of the in-service training program will depend upon the sincerity of the chief physical therapist and section supervisors and their willingness to accept the responsibilities placed upon them. One can always gain the confidence and cooperation of staff members by presen-

tation of well-prepared lectures, intelligent discussions, and interesting demonstrations.

Class participation should be very active. All physical therapists should feel free to discuss and question any topic or issue without hesitation. There is a need for additional learning and training and for "postgraduate" experience, and there comes a time when we are all in need of a good review of all the things that we learned long ago.

There exists a feeling in some circles that an in-service training program is a waste of time and is not the responsibility of the physiatrist and/or chief physical therapist. However, this is not the case. An in-service training program, when properly conducted, will result in increased efficiency of all the members of the staff, in more intelligent application of physical therapy, and in increased morale among all members of the department.

Ethics

Theodore Marton

Theodore Marton is attending New York University, doing graduate work leading to a Master's degree in physical therapy. He has a scholarship from the National Foundation for Infantile Paralysis. Mr. Marton also did his undergraduate work, for which he received the Watson L. Savage Memorial Scholarship, at New York University. During the war he served with the U. S. Navy in the Pacific area.

I would like to discuss the subject of ethics as I see it. Quite frequently a definition of ethics is transformed into a detailed listing of characteristic traits, the possession of which should, theoretically, insure ethical behavior. I recognize the fact that desirable personal traits are essential to good ethical behavior. However, I see ethics as a distinct entity. I am aware of the fact that my thinking on the subject has been rather limited. Nevertheless, I believe I can justify my ideas by stating that ethics are not simply a behavior resultant, but rather a specific set of classified moral responsibilities.

These unwritten laws of ethical behavior establish the scope and distribution of various responsibilities. They include duties, vested authorities, priorities, rights and privileges, and modes of personal conduct.

The ethical pattern directs the thinking and behavior of society toward predetermined objectives which society has deemed valuable. It is at this point that ethics become serviceable to civilization. Ethics make man aware that his purpose is not to function as an irresponsible individual, ignoring humanity around him, but to realize that his own welfare is bound to that of the society in which he participates.

In the field of physical therapy, ethical obligations are especially distinct. Our primary objectives are to alleviate discomfort and to help the ill or disabled to regain as nearly normal function as is possible. In order to realize these goals, a group of responsibilities automatically manifest themselves, without which the welfare of the patient would be threatened. These responsibilities include: acceptance of the doctor's diagnosis, prescription, and judgment regarding treatment as coming from the highest authority; attainment of efficiency, thoroughness, and sincerity in the administration of treatment; cooperation among therapeutic services; reliance upon and respect for co-workers; and the realization that each patient is an individual presenting for consideration problems that are peculiar to him alone.

If this conception of ethics is acceptable, the novice, to determine the proper ethical behavior in a particular instance, need only view his problem in the light of ultimate aims and thus decide with what behavior he would most closely approach the desired results.

Physical Therapy in a Small General Hospital

Thelma Brown

Physical therapy in the small general hospital provides the physical therapist with a most interesting and satisfying challenge. In this setting she will be called upon to give prescribed physical therapy treatment for almost every type of illness or condition that the community and its adjacent industrial area affords. Her patients will include hospitalized and ambulatory out-patients from varied economic groups. They will be referred by the general practitioner with a limited knowledge of the facilities of the department, and by the highly specialized physician who will be explicit and often very detailed in his prescription for physical therapy treatment. These patients will present varied types of problems in treatment, ranging in scope from the newborn infant with an orthopedic condition at birth, to the geriatric patient with a recent amputation. The typical day's work in a small general hospital will include ample opportunity for the application of electrotherapy, mechanotherapy, hydrotherapy, therapeutic exercise and massage in treating a varied patient load. And in all probability the physical therapist will find that the ratio of patients with medical disabilities as compared to those with traumatic injuries and other orthopedic disabilities will be fairly equal. This, of course, gives her a rare opportunity for putting into practice all the special skills and knowledge of her profession.

Many teaching opportunities arise in the relationships with patients. For example, the physical therapist may need to teach simple ways to alter home equipment to encourage good posture, such as adapting an adult chair to fit a child. Also, the patient may be taught ways of conserving energy through efficient use of muscle power and leverage which are involved in standing, reaching and lifting.

President Hospital and Training School, Chicago, Ill.

Although the generalized treatment aspects of physical therapy are inviting and are of prime importance, a real challenge is presented if the advent of the physical therapist is to mean an actual improvement in total patient care. In the small general hospital, where physical therapy personnel is at a minimum, this can be accomplished by coordinating physical therapy and related services on a satisfactory working level. There should be planned interchanges of information relative to patient care between nurses, occupational therapists, medical social workers and the hospital teacher. The physical therapist and the nurse have many overlapping duties in patient care, which will have more meaning in the over-all care to patients, if close correlation exists between the two. Both are concerned with the promotion of the efficient use of the body in rest and in activity; both are concerned with the prevention and reduction of crippling; and both participate in the care of patients with orthopedic and other types of disabilities. Careful planning of the department schedule should include planned lectures and demonstrations by the physical therapist which will teach integration of the principles of body mechanics and posture, which are vital to good patient care.

The physical therapy department should be equipped to treat all types of disabilities, and should include in addition to the usual equipment and exercise apparatus, a splint locker and tool chest which contains suitable materials for improvising various types of splints and plaster molds. There should also be dressing trays for clean and septic wounds, as the physical therapist will often have orders for redressing both types following physical therapy treatment. Occasionally treatments will be ordered for patients who cannot be transported to the department, and for these patients it is wise to have some special

portable equipment, such as infra-red and electrical stimulation machines. These can be handled easily and without the damage which usually occurs in repeated transfer of heavy equipment.

In the small general hospital, physical therapy personnel will probably consist of two or three qualified physical therapists and an aide. Consequently, the treatment rooms of the department should be located close together, so that adequate observation will be possible for a maximum number of patients being treated.

With regard to qualifications for the physical therapist in the small general hospital, good basic professional training is essential, which means successful completion of a program of study in physical therapy approved by the Council on Medical Education and Hospitals of the American Medical Association. The funds of the small general hospital are usually not adequate to employ the much needed "orthopedic nurse specialist," consequently the physical therapist with nursing background and orthopedic nursing experience can be of great assistance with her contributions to patient care through nursing education.

In conclusion, the physical therapist who is seeking a comprehensive program, which offers a wide range of treatment opportunities and permits utilization and further development of her teaching and creative qualities, will find work in the small general hospital rewarding.

Physical Therapy in the Psychiatric Field

In line with present-day trends in medicine, emphasis is now placed on an intensive treatment regimen for the mentally ill, instead of on hospital custodial care alone. Physical therapy is integrated with other medical services and specialties in definitive treatment. The physical therapist, as a member of the total treatment team, functions in close coordination with the efforts and activities of all the hospital or clinic services in restoring patients to a state of health and well-being consistent with the practical demands of daily living. All persons concerned with medical treatment for the mentally ill must give due consideration to the patient's physical, mental, social and economic welfare as they relate to his present and future life. This consideration is necessary whether the patient is treated in a home, special hospital, general hospital or outpatient clinic.

The physical therapist, on medical prescription, provides treatment for patients with psychiatric conditions, per se, and with any other intercurrent and concurrent neurological and/or general medical and surgical disorder. Orientation of the patient to the treatment procedure and its purpose and the psychosomatic aspects of each treatment must be considered by the therapist as they apply to each patient. Many psychiatric patients may be infirm and/or generally debilitated. Mannerisms in posture, deformities resulting from continual attitudes of posture in sitting or standing positions and severe peripheral vascular disturbances are common symptoms in certain mental illnesses. Therapeutic measures are necessary to prevent and to treat the mental and physical deterioration. For the psychiatric patient, as for all other patients, the value of physical therapy methods and procedures is fully recognized in all three phases of medicine: prevention, diagnosis and treatment, and rehabilitation. Specifically, physical therapy may be employed for stimulation or sedation of the depressed or over-active, for relaxation to decrease or relieve tension and anxiety, for training in posture and coordination, for prevention of deformity, for relief of pain, for prevention of decubiti and for circulatory stasis and edema of the lower extremities in the chronic regressed.

The physical therapist must have knowledge and understanding of mental illness, since physical symptoms are often expressive of emotional conflicts or unconscious needs of the patient. It is desirable that pre-professional and professional training include courses in psychology, the study of normal personality development, and the etiology and characteristics of mental illness. Because treatment by any medical service or specialty is

Submitted by the Physical Therapy Section, Physical Medicine Rehabilitation Division, Department of Medicine and Surgery, Veterans Administration.

based upon treatment of the **whole** man, orientation is necessary as to the nature and complexity of physiological, psychological and sociological forces that have resulted in the physical and mental growth of each patient. Treatment is not merely for a diagnosis or illness, but for a person. What is the patient's basic personality? What was he like in school? What is his attitude toward his family, his work, his employer? How has he reacted to knowledge that he has a mental illness? What is his reaction to medical treatment and rehabilitation? All these factors must be known and understood.

Personal relationships are an integral part of treatment. It is important that the patient like and respond favorably to the physical therapist. The physical therapist should assume a friendly treatment attitude and have a real interest in the patient's progress and well-being. The establishment of favorable inter-personal relationships will enhance the efficacy of treatment. The patient may divulge information or express opinions to the physical therapist, which, when brought to the attention of the doctor, may be utilized for the patient's benefit. All of this requires both tact and skill, and intelligent recognition of facts which are pertinent and significant. Psychiatric patients react strongly to attitudes and manners, and readily detect insincerity on the part of the physical therapist.

Discussion of physical therapy in the psychiatric field cannot be complete without mention of the psychosomatic aspects of medical and surgical illnesses. All patients react emotionally to illness or disability in varying degrees, depending on the pathologic condition present and on the basic personality structure. Changes in overt behavior may be evident. The approach to the medical and surgical patient in his reaction to illness or disability must be individualized. Patients with anterior poliomyelitis, arthritis, pneumonia, tuberculosis, fractures and other similar diagnoses present reactions which may be specific to the individual and general to the diagnosis.

While physical therapists administer treatments and perform tests and measurements specific to a distinct specialty, their total efforts and responsibilities assume importance only in so far as they are integrated with all medical services and specialties in efforts and responsibilities directed toward one goal—total medical care and rehabilitation for each patient.

AMERICAN PHYSICAL THERAPY ASSOCIATION
TWENTY-SEVENTH ANNUAL CONFERENCE

CLEVELAND—June 25-30, 1950

RESERVATION BLANK

Mr. R. J. McSoley, Manager
Hotel Statler
Cleveland 1, Ohio

Please make the following reservations for me:

Single room with bath	**$4.00,**	**5.00,**	**6.00,**	**7.00**
Double bedded room with bath	**7.00,**	**8.00,**	**9.00,**	**10.00**
Twin bedded room with bath	**8.00,**	**9.00,**	**10.00,**	**12.00**
Suite: parlor and twin with bath			**16.00,**	**22.50**

Please circle type of room and rate desired. If a room at the rate requested is not available, one at the next highest rate will be reserved.

Arrival: Date ..... Time ..... DEPARTURE: Date ..... Time .....

Name: .....

Street: .....

City: ..... State: .....

All reservations will be confirmed. Reservations will be held until 6:00 P.M. unless hotel is notified of late arrival.

Reprints Available

One free copy of each scientific reprint (except the History of the American Physical Therapy Association, and the Anterior Poliomyelitis and Cerebral Palsy Issues of the REVIEW) will be provided upon request to all members, students in the approved schools and libraries. A small charge is made as indicated for additional copies to members, students and libraries, and for all copies to nonmembers. The informational brochures are available to all without charge. To obtain reprints write: American Physical Therapy Association, 1790 Broadway, New York 19, N. Y.

OUR ASSOCIATION
An informational booklet on the activities, scope and services of the American Physical Therapy Association.

PHYSICAL THERAPY—*Suggestions for Prospective Students.*
Outlines the professional course of study for college students preparing for physical therapy.

CODE OF ETHICS
Ethics for the physical therapist of the American Physical Therapy Association.

ESSENTIALS OF PROFESSIONAL ETHICS IN PHYSICAL THERAPY
MARY E. HAGEDEL

PERSONNEL POLICIES FOR QUALIFIED PHYSICAL THERAPISTS
Suggestions as to salary, hours, vacations, etc., by the American Physical Therapy Association.

NEW HORIZONS AND NEW RESPONSIBILITIES FOR THE PHYSICAL THERAPIST.
HOWARD A. RUSK, M.D.

UNDERLYING MECHANISMS IN SYMPTOMS OF POLIOMYELITIS: *Their Bearing Upon Treatment.*
THOMAS GOCKEL, JOS, M.D.

APPROVED SCHOOLS OF PHYSICAL THERAPY
A list of schools approved by the Council on Medical Education and Hospitals of the American Medical Association.

EDUCATIONAL OPPORTUNITIES FOR PHYSICAL THERAPISTS
A list of postgraduate programs offered by the approved schools and a list of specialized courses for physical therapists.

THE PHYSICAL THERAPY DEPARTMENT FROM AN ADMINISTRATOR'S VIEWPOINT.
JOSEPH P. PETERS

PHYSICAL TRAINING FOR ADOLESCENTS
CAROLYN BOWEN (5c)

PHYSICAL THERAPY IN THE TREATMENT OF RHEUMATOID ARTHRITIS.
MARY E. NESBITT (5c)

PASSIVE AND ACTIVE STRETCHING OF MUSCLES: *Spring Stretch and Control Group.*
SONYA WEBER, D.Sc., AND HANS KRAUS, M.D. (5c)

WHEEL CHAIRS
GEORGE G. DEAVER, M.D. (5c)

REHABILITATION OF THE HEMIPLEGIC PATIENT
DONALD A. COVALT, M.D. (5c)

PATIENT INSTRUCTION
MARGERY L. WAGNER (5c)

INTERDEPARTMENTAL RELATIONS OF ANCILLARY MEDICAL SERVICES: *With Special Reference to Physical Therapy.*
R. J. STULL. (10c)

PHYSICAL THERAPY AND CHEST SURGERY
FLORENCE S. LOUDED. (10c)

TIPS, GAMES AND APPARATUS FOR CHILDREN WITH CEREBRAL PALSY.
GLADYS G. ROGERS AND LEAH THOMAS (10c)

FUNCTIONAL TRAINING
EDITH BOCHWALD (10c)

ADMINISTRATION OF A COMMUNITY REHABILITATION CENTER
HAZEL E. FURNIOT (10c)

MASSIE-STRUMPELL ARTHRITIS: *With Emphasis on a Physical Therapy Regime.*
LUCILE NIGHOS (10c)

EMOTIONAL FACTORS IN RHEUMATOID ARTHRITIS: *Their Bearing on the Care and Rehabilitation of the Patient.*
ALFRED O. LUDWIG, M.D. (10c)

REHABILITATION OF THE INJURED CHEST
VICTOR P. SATINSKY MAJ., MC, AUS, AND DORA DYRENS (20c)

THE NEED FOR PHYSICAL THERAPY IN POSTPARTUM CARE.
WILLIE REBECCA HARVEY. (20c)

THE MEASUREMENT OF JOINT MOTION.
MARGARET LEE MOORE (25c)

THE PHYSICAL THERAPY REVIEW—*Special Anterior Poliomyelitis Issue.* July-August 1947 (75c)
The magazine contains 11 articles by leading physicians and physical therapists on research and treatment of polio. There are 16 abstracts of articles on polio from current medical journals.

A HISTORY OF THE AMERICAN PHYSICAL THERAPY ASSOCIATION.
IDA M. HAZENHUYER. (50c)
An account of the Association's activities and growth from 1921-1946.

THE PHYSICAL THERAPY REVIEW—*Special Cerebral Palsy Issue.* May-June 1948 (75c)
This magazine contains 8 articles by leading physicians and physical therapists on research and treatment of cerebral palsy. There are 5 abstracts of articles on cerebral palsy from current medical journals.

SCHOOLS APPROVED FOR TRAINING PHYSICAL THERAPISTS

By Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	Medical Director	Technical Director	Entrance Requirements	Length in Months	Classes Start	Tuition	Certificate, Degree, Diploma
CALIFORNIA							
Childrens Hospital Society, Los Angeles[2]	Samuel S. Mathews	Sarah S. Rogers	a[5]-b[5]-d	14	Sept	$300	Cert. or Degree
College of Medical Evangelists, Loma Linda, Calif.[1]	F. B. Moor	R. Wm. Burdan	a-b-c-d	12	Sept	$225	Cert. or Degree
Univ. of So. California, Los Angeles[1]	Charles L. Lawsonn	Charlotte W. Anderson	a-b-d-e-g	14	Sept	$324	Cert. or Degree
Univ. of California Med. School, San Francisco[1]	Lucile M. Eising	Margery Wagner	d-e	12	Sept	$120[7]	Cert. or Degree
Stanford Univ., Stanford[2] (Palo Alto)	Wm. Northway	Lucille Daniels	a-d-e-f-g	12	Jan June		Cert. or Degree
Permanente Hospital, Oakland and Vallejo[2]	O. L. Huddleston	Dorothy Hong	a-b-d	12	Sept July	$175 $250	Cert. or Degree Cert.
COLORADO							
Univ. of Colorado Med. Center, Denver[1]	Harold Dinken	Mary Lawrence	a-b-d	12	Sept	$200	Cert. or Degree
ILLINOIS							
Northwestern Univ. Med. School, Chicago	Emil D. W. Heuner	Gertrude Beard	a-b-d-e	12	Oct	$410	Cert.
IOWA							
Univ. of Iowa Med. School, Iowa City[1]	W. D. Paul	Olive C. Farr	a[5]-e	12	Sept	$200	Cert.
KANSAS							
Univ. of Kansas, School of Med., Kansas City[1]	Donald L. Rose	Lilyan G. Warner & Ruth Monteith	a-b-d-g	12	Feb Sept	$60[8]	Cert. or Degree
MASSACHUSETTS							
Boyve-Boston School of Phys. Educ., Boston	Howard Moore	Constance K. Greene	g	36	Sept	$850	Degree
Simmons College, Boston	Wm. T. Green Arthur L. Watkins	Janet B. Merrill	a[5]-b-d-g	16-36	Sept	$650	Cert. or Degree
Boston Univ. College of Phys. Ed. for Women: Sargent College, Cambridge	Kenneth Christaphe	Adelaide McGarrett	a-b-d-f-g	12 4 yrs.	Sept	$495	Cert. or Degree
MINNESOTA							
Univ. of Minnesota, Minneapolis[1]	Miland E. Knapp	Ruby M. Green	d-f-g	2 yrs.	Sept	$135[9]	Degree
Mayo Clinic, Rochester[1]	Earl C. Elkins	Harry Keown	a-b-c	12	Sept	None	Cert.
MISSOURI							
Washington Univ. School of Medicine, Barnes Hospital, St. Louis[2]	Sedgwick Mead	Beatrice F. Schulz	f	2 yrs.	Sept	$480[7]	Degree
St. Louis Univ. School of Nursing, St. Louis[1]	A. J. Kolkis	Sr. Mary Imelda	g	36	Jan Sept	$300	Degree
NEW YORK							
Albany Hospital, Albany	John W. Ghormley	Catherine Graham	a-b-d	12	Sept	$250	Cert.
Columbia Univ., New York[1]	Wm. B. Snow	Fluy Pinkerton	a-e-f 1 or 2 yrs.		Sept	$450	Cert. or Degree
New York Univ. School of Education, New York[1]	George G. Deaver	Elizabeth C. Addoms	a[5]-b-d-g	12	Sept	$520	Cert. or Degree
NORTH CAROLINA							
Duke Univ. School of Med., Durham[1]	Lenox Baker	Helen Kaiser	a[5]-b[5]-d	15	Oct	$300	Cert.
OHIO							
Cleveland Clinic, Cleveland	S. G. Gamble	Anna Wetterhum	a-b-d	12	Jan	$200	Cert.
PENNSYLVANIA							
D. T. Watson School of Physical Therapy, Leetsdale[1]	Jessie Wright	Kathryn Kelley	a[5]-b[5]-d	12	Oct	$300	Diploma
Graduate Hospital, Univ. of Pa., Philadelphia[1]	George M. Piersol	Dorothy Baethke	b[5]-e	12	Sept	$500[7]	Cert.
TEXAS							
Hermann Hospital, School of Physical Therapy, Houston[1]	Oscar O. Selke, Jr.	Mary Elizabeth Kalb	a-b-d	12	Oct	$300	Cert. or Degree
Univ. of Texas School of Med., Galveston[1]	G. W. N. Eggers	Ruby Decker	a-b-d	12	Jan	$183[7]	Cert.
VIRGINIA							
Baruch Center of Physical Med. of Medical College of Virginia, Richmond[1]	Walter J. Lee	Susanne Hirt	a-b-c-g	12	Sept	$275[7]	Cert. or Degree
WISCONSIN							
Univ. of Wisconsin Med. School, Madison[1]	Harry D. Beaumon	Margaret Kohli	a-b-f-g	12	Sept	$150[7]	Cert. or Degree
MEDICAL DEPARTMENT—U. S. ARMY							
(a) Medical Field Service School, Brooke Army Medical Center, San Antonio, Texas, and	James E. Tate, Lt. Col., M.C.	Agnes F. Snyder, Major, WMSC	b-e	12[10]	Nov	None	Cert.
(b) Fitzsimons General Hospital, Denver, Colorado, or	H. B. Lawrombe, Colonel, M.C.	Olena M. Cole, Captain, WMSC	Completion of Medical Field Service School				
(c) Walter Reed General Hospital, Army Medical Center, Washington, D. C.	John H. Knittert, Lt. Col., M.C.	Barbara Robertson, Captain, WMSC	Completion of Medical Field Service School				

Entrance Requirements

For One Year Course: a = Graduation from accredited school of nursing; b = Baccalaureate degree with major in Physical Education; c = Two years of college with science courses; d = Three years of college with science courses; e = Baccalaureate degree with required science courses.

For Two Year Course: f = Two years of college with science courses.

For Four Year Degree Course: g = High school graduation.

[1]Male students admitted.
[2]Nonresidents charged additional fee.
[3]Certificate granted by Childrens Hospital Society; degree granted by University of California at Los Angeles.
[4]Tuition reduced second semester of second year.
[5]12 months includes training at the Medical Field Service School and Fitzsimons or Walter Reed General Hospitals.
[6]Additional college science required.
[7]Plus additional University fees.

Editorials

• Many more physical therapists must be trained in the next few years to meet the ever-growing demands for employment in the field. The task of recruitment cannot be undertaken solely by the National Office or National and Chapter Education Committees but is the responsibility of every member of the American Physical Therapy Association.

As spring approaches, many high school and college students are talking about and making plans for further study and for careers. Schools are holding Career Conferences at which representatives of various fields are asked to tell the students about the requirements for admission to and the work of the persons in the field. Physical therapy should be one of the professions represented at such conferences.

One of the duties of the Chapter Education Chairman has been to make contacts with the counselors in high schools, colleges, local and state departments of education, and the like to inform them of "Physical Therapy as a Career" and to arrange for talks to students and for participation in Career Conferences.

Chapter members have often hesitated in volunteering to participate in vocational guidance activities because of a lack of information regarding material which should be presented to prospective students. A "Suggested Outline for a Vocational Talk" is published in this issue of the PHYSICAL THERAPY REVIEW (page 191) as an aid for constructing a talk for prospective students. The list of approved schools published each month in the Review includes pertinent data regarding individual schools, their location and requirements for admission.

Contact your Chapter Education Chairman today and volunteer your services to assist in the recruitment of prospective physical therapists.

—DOROTHY E. BAETHKE
Chairman, Committee on Education

• We have long felt that it would be desirable to incorporate the Review office with the National office. Recently, space became available in the building and soon after we were able to secure the personnel necessary to carry on the work of production.

This marks another era in the development of the Review. In many respects the growth of the Review has appeared rather haphazard and has been unpredictable. As each new problem has arisen it has been dealt with and at times it has been difficult to keep up with the changes. For example, the recent change to a monthly issue, which necessitates gathering and assembling almost twice as much material as was formerly used, has caused some disquieting moments for those who are responsible for securing suitable material.

With the establishment of the New York office it is hoped that more economical use of time will allow for better planning for the future. There are many ideas and plans still in a nebulous stage which we hope will become reality. Some of these improvements will relate to organization and may not be apparent to the casual reader but we want them to be manifest in added service. It seems best that, in the future, the editorial board be free from most of the mechanics of production so they may devote their time and efforts to more specific planning.

This is a fitting time to pay tribute to Mrs. Helen Eckersley, who for so many years served the Review faithfully as managing editor. She went along during the period of rapid growth and change and always maintained a great personal interest and pride in the Review. We are grateful for her work and give her our sincere appreciation.

We welcome to our staff the new managing editor, Tita Obando, and the business manager, Carol Vance, and wish them well.

Make your hotel reservations *now* for the Annual Conference. Send the blank form printed in this issue of the Review, or the card enclosed with your annual dues bill, to the Statler Hotel.

The registration fee for members will be, as in previous years, $5.00; student members, $2.00. Membership cards must be presented. There is no registration fee for guests, physicians, members of allied professions—nurses, teachers in schools for the handicapped, occupational therapists—and administrators and staff members of agencies serving the handicapped.

Annual Conference of the American Physical Therapy Association

Hotel Statler, Cleveland, Ohio

JUNE 25 to 30, 1950

Sunday, June 25

11:00 a.m.	School Section "Brunch"
2:00 p.m.	School Section (see sectional program)

Monday, June 26

10:30 a.m.	Model Chapter Meeting—Mary Macdonald, President of the Massachusetts Chapter
2:00– 4:00 p.m.	House of Delegates, General Session
4:00– 5:30 p.m.	Punch Bowl—Hostess, Ohio Chapter
8:00 p.m.	Formal Opening of the 27th Annual Conference—Marguerite Irvine, President of the American Physical Therapy Association Greetings from the Ohio Chapter—Margaret McEachern, President of the Ohio Chapter Address—Basil O'Connor, President of the National Foundation for Infantile Paralysis

Tuesday, June 27

Symposium on Physiology of the Heart and Circulation and Its Clinical Application in Physical Medicine

9:00– 9:10 a.m.	Introduction—The Importance of Circulation in the Practice of Medicine—Harry D. Bouman, M.D., Professor of Physical Medicine, University of Wisconsin Medical School
9:10–10:30 a.m.	The General Physiology of Heart and Circulation—R. S. Alexander, Ph.D., Assistant Professor of Physiology, Western Reserve Medical School
10:30–10:45 a.m.	Intermission
10:45–11:30 a.m.	The Influence of Exercise on the Heart—David F. Opdyke, Ph.D., Associate Professor of Physiology, Western Reserve Medical School
11:30–11:45 a.m.	The Heart as a Factor in a Clinical Exercise Program—Harry D. Bouman, M.D., Professor of Physical Medicine, University of Wisconsin Medical School
11:45–12:00 noon	Question Period
12:00– 2:00 p.m.	Luncheon
2:00– 4:30 p.m.	*Demonstrations of Physical Therapeutic Technics*—Coordinator: Floy L. Pinkerton, Director, Physical Therapy Training Course, Columbia University
2:00– 2:45 p.m.	Basic Technics in the Treatment of Cerebral Palsy—Harriet E. Gillette, M.D., Medical Director, Ardmore Crippled Children's Hospital, with Helen High, Physical Therapist
2:45– 2:55 p.m.	Question Period
2:55– 3:35 p.m.	The Values and Dangers Present in the Various Stretching Methods Pertaining to Orthopedic Conditions—Lester A. Russin, M.D., University of Cincinnati College of Medicine, and Enid G. Fifield, Randall J. Condon School, Cincinnati
3:35– 3:45 p.m.	Question Period
3:45– 4:20 p.m.	Relaxation Procedures—Jessie D. Wright, M.D., Director, D. T. Watson School of Physical Therapy, and Miriam Jacobs, Instructor, D. T. Watson School of Physical Therapy
4:20– 4:30 p.m.	Question Period
4:30– 6:00 p.m.	Motion Pictures and Viewing of Exhibits

Wednesday, June 28

Physiology Symposium

9:00–10:30 a.m.	Physiology and Measurement of Peripheral Circulation—Eric Ogden, M.D., Professor of Physiology, University of Ohio Medical School
10:30–10:45 a.m.	Intermission
10:45–11:45 a.m.	Physical Medicine in Diseases of Peripheral Circulation—Charles S. Wise, M.D., Associate Professor of Physical Medicine, George Washington University Medical School; Director of Physical Medicine, George Washington University Hospital
11:45–12:00 noon	Question Period
12:00– 2:00 p.m.	Luncheon
2:00– 4:30 p.m.	House of Delegates, General Session
4:30– 5:30 p.m.	Motion Pictures and Viewing of Exhibits
7:30 p.m.	Banquet (informal)

Thursday, June 29

Physiology Symposium

9:00–10:00 a.m.	The Effect of Temperature and Various Methods Used in Physical Medicine to Increase Temperature of Local Circulation—Harry M. Hines, Ph.D., Professor of Physiology, University of Iowa Medical School
10:00–10:50 a.m.	Physical Medicine in the Clinical Aspects of Local Heat Application—Harry D. Bouman, M.D., Professor of Physical Medicine, University of Wisconsin Medical School
10:50–10:45 a.m.	Question Period
10:45–11:45 a.m.	The Role of Circulation in the Physiology of Heat Regulation—Allen D. Keller, Ph.D., Chief, Physiology Branch, Medical Department, Field Research Laboratory, Fort Knox, Kentucky
11:45–12:00 noon	Question Period
12:00– 2:00 p.m.	Luncheon
2:00– 4:50 p.m.	Research Papers—speakers to be announced What Research Means to a Profession—Its Growth and Continuation—Harry M. Hines, M.D., Professor of Physiology, University of Iowa Medical School
4:50– 6:00 p.m.	Motion Pictures and Viewing of Exhibits
7:30– 9:00 p.m.	House of Delegates, General Session

Friday, June 30

9:00– 9:45 a.m.	The Role of the Physical Therapist in the Total Care of the Child Patient—Julius Richmond, M.D., Department of Pediatrics, University of Illinois Research Center
9:45–10:30 a.m.	Speaker to be announced
10:30–11:00 a.m.	Viewing of Exhibits
11:00–11:45 a.m.	Physical Medicine and Rehabilitation in Geriatrics—Bert A. Treister, M.D., Consultant in Physical Medicine, Cuyahoga County Nursing Home, Cleveland
12:00– 2:00 p.m.	Luncheon
2:00– 4:30 p.m.	Open House and Clinical Demonstrations Crile, Veterans Administration hospital—"Lower Extremity Prostheses"—Carl A. Maxwell, M.D. Rosemary Home (cerebral palsy) Mt. Sinai Hospital Cleveland Clinic Cleveland City Hospital Cleveland Rehabilitation Center Rainbow Hospital Cleveland Health Museum

Saturday, July 1

School Section

9:30–12:00 noon	Educational Program
12:00– 1:30 p.m.	Luncheon
1:30– 4:30 p.m.	Business Meeting

Registration Fee: Members, $5.00; Physical Therapy Students, $2.00.
Membership cards must be presented; 1949-50 or 1950-51 cards will be honored.

Annual School Section Brunch to Be Held on Sunday

The School Section will hold its annual brunch for all members of the Section, active and affiliate, on Sunday, June 25th, at 11 a.m. Please procure your tickets in advance, from Beatrice Schulz, Department of Physical Therapy, Barnes Hospital, 600 S. Kingshighway, St. Louis 10, Missouri. The cost will be $2.50, including tax and gratuity. Your ticket will be sent to you prior to the meeting.

Northern District, Ohio, Conference Committees

Local Arrangements—Sara Martz, Chairman; Lois Perrine; Frances Stein; Loretta Boger
Banquet—Joan Bell
Properties and Equipment—Betty Glomb
Exhibits—Bernice Krumhansel
Punch Bowl and Ushers—Lucille Fitts
Information and Entertainment—Patricia Ericson Phillips
Public Relations—Alice Kingman

School Section Program

Sunday, June 25

11:00– 1:00 p.m. *Branch*
- Student Selection Research Program—E. Jane Carlin, M.S., Educational Secretary, American Physical Therapy Association
- Physical Therapy in Home Care—Louise Bailey, Physical Therapy Consultant, National Society for Crippled Children and Adults

2:00– 4:30 p.m. *Educational Program*
- Orientation of New and Student Physical Therapists—Owen W. Teuter, M.A., Chief of Physical Therapy, Veterans Administration Hospital, Fort Hamilton, Brooklyn, New York
- Methods of Clinical Instruction—Beatrice Whitcomb, Captain, Women's Medical Specialist Corps, U. S. Army
- Open Discussion—Clinical Training

Saturday, July 1

9:30–12:00 noon *Educational Program*
- Physical Therapy in Neuropsychiatric Hospitals—Lola E. Smith, Physical Therapist, Veterans Administration Hospital, Gulfport, Mississippi
- Planning a Graduate Program—Dorothy R. Hewitt, M.S., Instructor in Physical Therapy, Stanford University
- Open Discussion—Administration and Curriculum

1:00– 4:30 p.m. Business Meeting, Election of Officers

Exhibitors at the 27th Annual Conference

Educational

Women's Medical Specialist Corps, U. S. Army
Public Health Service
Veterans Administration
Joint Orthopedic Nursing Advisory Service
National Society for Crippled Children and Adults
The American Society of X-ray Technicians
National Foundation for Infantile Paralysis

Professional

American Physical Therapy Association:
- Colorado Chapter
- Massachusetts Chapter
- Northern California Chapter
- Washington Chapter
- Western Missouri Chapter
- Wisconsin Chapter

Members of the American Physical Therapy Association representing the following groups:
- Rehabilitation Center of San Francisco
- Association for the Aid of Crippled Children, New York City
- Kessler Institute for Rehabilitation, West Orange, New Jersey
- Hospital for Chronic Illness, Rocky Hill, Connecticut

Commercial

Thermo-Electric Company
The Liebel-Flarsheim Company
Brown and Connolly
The Birtcher Corporation
Ille Electric Corporation
The Ries Corporation
The Burdick Corporation
Teca Corporation
Monahan and Wood

Conference Notes

Be sure to be there Monday for the important events—House of Delegates, Ohio Punch Bowl, and the opening session on Monday night. Mr. O'Connor, who will speak at the opening session, is planning a very important address. Do not miss it!

We think you will be very pleased with the demonstrations. Particular effort is being put into the staging of these. It will be new; *you'll like it.*

Come to Cleveland in June. Meet old friends. Make new ones. It's the big "P.T." event of the year. The physiology symposium alone is an instructional course for which most organizations would charge extra. It's all yours for a five-dollar registration fee.

Basil O'Connor

Basil O'Connor, President of the National Foundation for Infantile Paralysis, Inc., will address members of the American Physical Therapy Association at the formal opening of the Twenty-seventh Annual Conference.

Mr. O'Connor is the senior member of the law firm of O'Connor & Farber, and was formerly the law partner of the late President, Franklin D. Roosevelt. He was born in Taunton, Massachusetts, in 1892, and was graduated from Dartmouth College and Harvard Law School. He has also received honorary degrees from St. John's University, Blackburn College, Dartmouth College, and The College of Wooster.

Mr. O'Connor is president of the Georgia Warm Springs Foundation, the Franklin D. Roosevelt Library, the Finlay Institute of the Americas, the Johnson O'Connor Research Foundation, the Human Engineering Laboratory, the National Vitamin Foundation, Inc., and the American Museum of Health. He is a past president of the American Red Cross, and was also Chairman of the Central Committee.

The noted lawyer is also Chairman of the Board of Governors of the League of Red Cross Societies, the Board of Trustees of Tuskegee Institute, the Board of the International Institute of Health Education, and the Finance Committee of the Fourth International Congresses on Tropical Medicine and Malaria.

Mr. O'Connor is a member of The President's Committee on Religious and Moral Welfare and Character Guidance in the Armed Forces. He is a member of the New England Society, the Guild of Catholic Lawyers, the National Aeronautic Association and Sigma Phi Epsilon Fraternity. He has been decorated by the heads of government of many foreign countries and has also received high honors from a number of foreign Red Cross societies.

"Midsummer Night's Dream" to Be Presented in Cleveland

Cain Park Theatre, an outdoor theatre in a sylvan setting in one of Greater Cleveland's more entrancing beauty spots, should be a must on the list of all delegates to the American Physical Therapy Association Conference, June 26-30.

This beautiful theatre under the skies will be offering what is promised to be a spectacular version of Shakespeare's "Midsummer Night's Dream" while our conference is being held in Cleveland.

Arrangements have been made with the management of the theatre, which is municipally-owned and operated, to have a block of tickets set aside so delegates and visitors to our conference may be seated together. The Cleveland arrangements committee has tentatively requested a block of tickets be reserved for the evening of Tuesday, June 27th.

Nationally famous for the quality of its productions, Cain Park Theatre promises a most unusual and entertaining treatment of the magical, moonlit, and musical extravaganza that has helped make Shakespeare's name live through the centuries.

Come to Cleveland, and plan to spend a delightful evening at Cleveland Heights' Cain Park!

Medical Abstract Service Commends Review

The following comment concerning the PHYSICAL THERAPY REVIEW was received from the Medical Abstract Service, a publication of the Physicians' Record Company.

"We feel that it will interest you to know that after your journal has been read by our Managing Editor, Mr. T. Arthur Turner, and our Supervising Editor, H. Worley Kendell, M.D., and members of his staff at Illinois Research Hospitals that our copies are being put to a very good use.

"They are being passed on to students in medicine; some being shipped to the Philippine Islands, where there seems to be a great shortage of good medical literature as represented by your journal.

"Much time and effort are put into the publication of your informative journal and it must be encouraging to know that copies of your journal are not shelved but live a full life of service furthering medical education."

Association Activities

New Chapters to Be Organized

Chapters are being organized in South Dakota, Montana, and New Mexico. It is hoped that organization will be completed by June, and that the new chapters will have representation at the House of Delegates.

States which have no chapters are: North Dakota, Idaho, Nevada, and Mississippi. *Let's make it 100%!* (Chapter dues for members in these areas are being held in the National Office temporarily, pending organization.)

Chapter Activities

Connecticut: Dr. Henry H. Kessler, The Kessler Institute for Rehabilitation, West Orange, New Jersey, discussed "Amputee Rehabilitation" at the March meeting.

Illinois: "Various Aspects of Poliomyelitis, Including Research" was the topic discussed at the February meeting. The speakers, Dr. E. J. Cummins and Dr. Leonard Schuman, were introduced by Ann Prochaska, who worked with them during the past epidemic at Centralia.

The March meeting of the Illinois chapter was held at the Chicago Illini Union. Dr. Douglas Buchanan, Neurologist, was the moderator for the panel discussion on cerebral palsy. Panel members included: Dr. Buchanan, Dr. Harry E. Barnett, Orthopedist; Mrs. Cleon Truitt, Psychologist; Miss Nina Silver, Speech Therapist; Miss Jane Threinen, Occupational Therapist; Miss Ingrid Sinervo, physical Therapist. Guests included members of the Illinois Occupational Therapy Association, social workers, and teachers from the special schools in the Chicago area.

Kansas: At a recent meeting, Dr. Donald L. Rose, Director of Physical Medicine, University of Kansas Medical Center, discussed "Electrodiagnosis." Several members of the Western Missouri Chapter attended.

The Kansas chapter has been giving special attention to the project of interesting high school students in physical therapy as a career. Students and vocational guidance counselors are being contacted by Lilyan G. Warner, Instructor in Physical Medicine at the University of Kansas.

Maryland: Dr. Winthrop M. Phelps, Medical Director of the Childrens Rehabilitation Institute, Cockeysville, Maryland, was the guest speaker at the March meeting. Dr. Phelps participated in a panel which discussed "Physical Therapy in Relation to the Treatment of Lesions of the Central Nervous System."

Massachusetts: The Massachusetts Chapter of the American Physical Therapy Association is now incorporated under the laws of Massachusetts. The charter was approved officially on March 14, 1950.

Twenty chapter members are enrolled in a two-semester credit course entitled "Recent Advances in Physical Therapy," being given this spring at Sargent College by Dr. Sidney Licht of the Veterans Administration.

Eastern Michigan: Hilda and Signe Keikkila spoke on "Methods of Progressive Relaxation" and gave an accompanying demonstration at a recent meeting of the Chapter.

Eastern Missouri: Ruth Heldt, who is both a registered nurse and a physical therapist, was guest speaker at the Chapter's March meeting. Her topic was "Treatment of the Cerebral Palsied Child."

Lorraine Lake, a chapter member, spoke on "An Institute for Rehabilitation, New York University" at the April meeting.

Mildred Elson Honored

Mildred Elson, Executive Secretary of the American Physical Therapy Association, was elected a member of the Board of Directors of the National Health Council for a three-year term.

Field Trips

Jane Carlin left on April 18th for San Francisco; Seattle; the Joint International Occupational Therapy and Physical Therapy Meeting in Boise, Idaho; Denver, Colorado; and Detroit, Michigan. In Detroit she will meet with the Physical Medicine and Rehabilitation Committee of the American Psychiatric Association.

Lucy Blair, Polio Consultant, assumed her duties on April 10th. She attended a workshop conducted by the Michigan Crippled Children's Commission at Higgins Lake, April 20th-23rd. She also attended a Michigan Chapter meeting on April 18th.

Catherine Worthingham attended a meeting of the Tennessee Chapter in April.

Floy Pinkerton is attending the Canadian Physiotherapy Association's annual meeting in Montreal.

Dorothy Baethke is attending a meeting at Skidmore College.

Mildred Elson left for London, April 15th, and returned about May 5th. Letters to individuals in the World Health Organization, the International Labor Council and the United Nations Social and Economic Commission had been obtained and appointments in Geneva were made.

Nominees for Executive Committee and Nominating Committee

The following list of nominees has been submitted by Lucille Daniels, Chairman, Nominating Committee of the American Physical Therapy Association.

PRESIDENT

Dorothy Baethke — Philadelphia, Pa.
Mary Singleton — Durham, N. C.

VICE-PRESIDENT

Mary Haskell — Santa Monica, Cal.
Harriet Lee — Washington, D. C.

SECRETARY

Virginia Greenwood — Boston, Mass.
Marian Williams — Palo Alto, Cal.

TREASURER

Floy Pinkerton — New York, N. Y.
Adelaide McGarrett — Cambridge, Mass.

DIRECTORS

Marguerite Irvine — Seattle, Wash.
Margaret Kohli — Madison, Wis.
Florence Linduff — Washington, D. C.
Lilyan Warner — Lawrence, Kansas

SPEAKER

Charlotte Anderson — Los Angeles, Cal.
Mary Nesbitt — Boston, Mass.

NOMINATING COMMITTEE

Elizabeth Lanctot — Youngstown, Ohio
Mary Lawrence — Denver, Colo.
Janet Merrill — Boston, Mass.
Jessie Stevenson — Nashville, Tenn.

Brief Biographies of All the Candidates

PRESIDENT

Baethke, Dorothy
Member, A.P.T.A., since 1928
Director, A.P.T.A., 1946-48, 1948-50
Chairman, Committee on Education, 1947-48, 1948-50
Chapter membership and activities:
Minnesota—Vice-president, Treasurer, President
Illinois
Pennsylvania By-laws Committee
Technical Director, Graduate Hospital School of Physical Therapy, University of Pennsylvania

Singleton, Mary C.
Member, A.P.T.A., since 1934
Vice-chairman, House of Delegates, 1946-48
Speaker, House of Delegates, 1948-50
Chapter membership and activities:
District of Columbia
Carolina—President
Clinical Supervisor, Division of Physical Therapy, Duke University School of Medicine

VICE-PRESIDENT

Haskell, Mary
Member, A.P.T.A., since 1929
Chairman, Committee on Legislation, 1946-48
Secretary, A.P.T.A., 1948-50
Polio Consultant, A.P.T.A., 1949
Consultant, National Office, A.P.T.A., 1948 (to compile manual "Essentials of a Hospital Department —Physical Therapy")
Chapter membership and activities:
Carolina—Secretary, President
Southern California
Physical Therapist, Santa Monica, California

Lee, Harriet
Member, A.P.T.A., since 1951
Chairman, A.P.T.A. Publicity Committee, 1940-41
Vice-president, A.P.T.A., 1946
Chairman, A.P.T.A. Nominating Committee, 1948
Member, A.P.T.A. Inter-professional Relations Committee, 1948-49
Vice-president, A.P.T.A., 1949-50
Vice-speaker, A.P.T.A. House of Delegates, 1949-50
Chapter membership and activities:
Colorado—President
District of Columbia
Major, W.M.S.C., assigned to Physical Therapy Branch, Physical Medicine Consultants Division, Office of the Surgeon General, U. S. Army, Washington, D. C.

SECRETARY

Greenwood, Virginia
Member, A.P.T.A., since 1934
Massachusetts Chapter member, A.P.T.A., National Program Committee, 1949
Chapter membership and activities:
Pennsylvania
Massachusetts—Relations Committee Chairman, Vice-president
Supervisor, V. A. Regional Office, Boston, Massachusetts

Williams, Marian
Member, A.P.T.A., since 1938
A.P.T.A. Relations Chairman, 1946-48
Chapter membership and activities:
North California—President; Co-chairman, Chairman, Legislative Committee
Associate Professor, Division of Physical Therapy, Stanford University

TREASURER

Pinkerton, Floy
Member, A.P.T.A., since 1945
Chairman, A.P.T.A. Public Laws Committee, 1948-50
Chapter membership and activities:
New York—Secretary
Technical Director, School of Physical Therapy, Columbia University

McGarrett, Adelaide
Member, A.P.T.A., since 1937
Chairman, A.P.T.A. Committee on Legislation, 1943-46
Chapter membership and activities:
Indiana—President
Massachusetts—Chairman, Committee on Legislation
Technical Director, School of Physical Therapy, The Sargent College, Boston University

DIRECTORS

Irvine, Marguerite
Charter Member, A.P.T.A.
Chairman of Committee on Education, A.P.T.A., 1928-30
Director, A.P.T.A., 1936-42
Member, Physical Therapy Scholarship Committee, 1943-45
Vice-president, A.P.T.A., 1948-49
President, A.P.T.A., 1949-50
Chapter membership and activities:
Washington—Chairman, Education Committee
Director of Physical Therapy, Seattle Orthopedic and Fracture Clinic

Kohli, Margaret
Member, A.P.T.A., since 1939
Treasurer, A.P.T.A., 1948-50
Chairman, A.P.T.A. Program Committee, 1948-50
Chapter membership and activities:
Wisconsin
Technical Director, School of Physical Therapy, University of Wisconsin

Lindaff, Florence
Member, A.P.T.A., since 1937
Member, A.P.T.A. Nominating Committee, 1948
Member, A.P.T.A. Committee on Education, 1949-50
Chapter membership and activities:
District of Columbia—President
Chief, Physical Therapy Section, Physical Medicine Rehabilitation, Veterans Administration, Washington, D. C.

Warner, Lilyan
Member, A.P.T.A., since 1944
Member, A.P.T.A. Exhibits Committee, 1948-50
Chapter membership and activities:
Kansas—Public Relations Chairman, President
Co-technical Director, School of Physical Therapy, University of Kansas

NOMINATING COMMITTEE

Lauctot, Elizabeth
Member, A.P.T.A., since 1939
Chapter membership and activities:
Ohio—Chairman, Southern District; Director, Ohio Chapter
Physical Therapist, Youngstown Ohio School

Lawrence, Mary
Member, A.P.T.A., since 1940
Chairman, A.P.T.A. Committee on Education, 1946-47; Member, Committee to Organize School Section
Chapter membership and activities:
Virginia
Colorado
Technical Director, School of Physical Therapy, University of Colorado

Merrill, Janet
Charter member, A.P.T.A.
Treasurer, A.P.T.A., 1921-24 (first Treasurer)
Chapter membership and activities:
Massachusetts
Technical Director, School of Physical Therapy, Children's Hospital, Boston, Massachusetts, since 1920
Chairman, Committee on Education, 1942
Technical Director, School of Physical Therapy, Simmons College

Stevenson, Jessie
Member, A.P.T.A., since 1927
Associate Editor, "Physiotherapy Review," 1938-40
President, A.P.T.A., 1944-46
Director, A.P.T.A., 1946-48
A.P.T.A. representative to Advisory Board, A.R.P.T.T., 1946-49
Chapter membership and activities:
Chicago—President, Educational Committee
New York
Tennessee
Associate Professor of Nursing, Vanderbilt University

SPEAKER

Anderson, Charlotte
Member, A.P.T.A., since 1935
Vice-president, A.P.T.A., 1947-48
Chapter membership and activities:
South California—President
Technical Director, School of Physical Therapy, University of Southern California

Nesbitt, Mary
Member, A.P.T.A., since 1931
Chairman, A.P.T.A. Committee on Education, 1943-46
Member, A.P.T.A. Curriculum Committee
Chapter membership and activities:
Western New York
North California—Membership Chairman
Massachusetts—Program Chairman
Supervisor of Physical Therapy, Massachusetts General Hospital (Instructor and Clinical Supervisor, Simmons, Bouve, Sargent Schools of Physical Therapy)

Suggested Outline for Vocational Guidance Talk

What is Physical Therapy?

A. Definition: simple but complete definition of physical therapy

B. History: brief resume indicating growth and development

Present-day Importance

A. Growth and importance caused by:
1. Increased need
2. Increased community interest in handicapped
3. Growth of research in field
4. Impetus gained by war-time demands for services
5. Increased use by many specialties

B. Used in many areas such as:
   1. Hospitals
   2. Clinics
   3. Crippled children's schools
   4. Rehabilitation centers
   5. State and Federal agencies
C. Present need for qualified therapists
   1. National—15,000 by 1960
   2. Local—as indicated
D. Present supply—4,000 qualified as of 1950, 10% of which are men

Nature of Work

A. Brief description of specific procedures and types of cases treated
B. Special fields
   1. Cerebral palsy, poliomyelitis
   2. Local specialties

Necessary Qualifications of Prospective Students

A. Sex and age
   1. Both men and women
   2. Age from 20-35
B. Personal qualifications
   1. Stable, well-adjusted
   2. Interested in people and service to people
   3. Works well with others
   4. Good health
C. Educational requirements
   1. College—science major
   2. College—physical education
   3. Nursing
D. Specific requirements in science—See "Suggestions for Prospective Students," American Physical Therapy Association.

Physical Therapy Training

A. Approved schools—different types, one-, two-, or four-year courses
B. Cost of training
C. Scholarships
D. Importance of early application and good grades

Opportunities for Advancement

A. Supervisory, instructional, research
B. Graduate education

Salaries

Working Conditions

Professional Organizations

A. American Physical Therapy Association
B. American Registry of Physical Therapy Technicians
C. Local licensing laws

Supplementary Information

A. Reprinted material from American Physical Therapy Association—See List of Reprints, PHYSICAL THERAPY REVIEW.
B. Films and slides
C. Sources of information
   1. American Physical Therapy Association
   2. National Foundation for Infantile Paralysis

Bylaw Amendment

The following proposed bylaw amendment will be included on the House of Delegates agenda for their meetings at our annual conference in June 1950. It is offered in an attempt to clarify interpretation and application of the section regarding restoral to active membership.

Article III, Section 7.

"Restoral to active membership. Any person who has become an inactive member may be restored to active membership if the Executive Committee approves and on

(a) Payment of dues for the current year and
(b) Taking such refresher work, or work under supervision, as the Executive Committee may require in the light of each particular case.

Any person who has resigned or allowed his dues to lapse may be restored to active membership if the Executive Committee approves

(a) on the payment of dues for the current year and
(b) on the payment of whatever is less of
   (1) Dues up to restoral of active membership but not including the amount that would have been allocated to the Association's official publication,
   or
   (2) of dues for two years at the current rate but not including the amount that would have been allocated to the Association's publication;
   and
   (3) taking such refresher work, or work under supervision, as the Executive Committee may require in the light of each particular case."

Membership News

Sarah Johnson has returned to Hartford after completing a course at Childrens Rehabilitation Institute in Baltimore.

Sheila Dunn, a graduate of the Physiotherapy School, Royal Infirmary, Glasgow, Scotland, has joined the staff of the New Haven unit of the Grace-New Haven Community Hospital.

Ruth Denny has been appointed Orthopedic Nurse and Physical Therapy Consultant with the Indiana Crippled Children's Services.

Jean Schenke is in charge of the polio unit at City-County Hospital in Fort Worth, Texas.

Shirley Cogland of the Massachusetts Chapter appeared with Mrs. Bertha Kelner, OTR, and Mrs. Eleanor Judd, RMT, on the March 5th program of the "Job School of the Air," sponsored by Station WEEI, Boston. The "Job School of the Air" is an open forum conducted by specialists in various fields, for the benefit of high school students who are choosing their vocations. Tape recordings of the programs are available for use in high school vocational guidance activities.

Marriages

Doris M. Schuelte is now Mrs. A. F. Stueck of Manitowoc, Wisconsin.

Addie Brengman was recently married to Carl B. Lind. They will live in Rockford, Illinois.

Clara Strauss of Cleveland is now Mrs. Clara S. Poulsen.

Marie J. Reed of Chicago is the bride of Raymond J. Adams, also of Chicago.

Mrs. Charles D. Wisham is the former Mildred F. MacPherson of Bridgeton, New Jersey.

Ann Logan Baird will marry Richard F. Weaver of Roanoke, Virginia, on April 22nd.

Elois Reinhard is now Mrs. Elois R. Swartz of Mt. Kisco, New York.

Janet Hinkle was recently married to Louis Robinson. The couple are making their home in Sunland, California.

Barbara Feucht, on the staff of the University of Iowa, is now Mrs. Barbara F. Randall.

The former Lt. Mildred E. Schapiro, who was stationed at Walter Reed General Hospital, was married to Howard H. Reizenstein in New York City on March 12th. The couple will live in Washington, where Mrs. Reizenstein expects to work at Emergency Hospital.

Margo Gruenbaum is now Mrs. Margo Berman of Rego Park, New York.

Lillian Mackie is the bride of Bernard Howes. Mr. and Mrs. Howes will live in Sloughton, Massachusetts.

Katharine Moran has married Charles Cashman and is now living in Providence, Rhode Island.

Word has been received of the death of Mrs. Susan K. Brauer, the former Susan Groglode Kohler, of East Liverpool, Ohio. Mrs. Brauer had been a member of the American Physical Therapy Association since 1947. She received her physical therapy training at Ashford General Hospital, West Virginia.

• The National Office is very appreciative of the promptness with which many of you have sent in your dues, personal data sheets, and polio recruitment cards. If by chance, you haven't sent yours in yet, *do it now.*

New Members

The following are newly accepted members of the American Physical Therapy Association:

Mary Lee Kyzer — Mrs. Laura J. Stump
Ruth F. Pierce — Mrs. Ann B. Weaver
Warren P. Springer

These newly accepted members are recent graduates of the following schools:

Baruch Center of Physical Medicine

Lt. Florence Frazier — Lt. Elaine O. Rosevear
Jean Hopkins

Simmons College

Nancy T. Watts

Listed below are the names of new student members, attending the following schools:

Columbia University

Robert P. Moyberry — Paul P. Proud

New York University

Anne C. Malek

University of Texas

Evna N. Ellington — Robert Plumberg
Robert Hileman — Jane J. Thomas
Lavina Horkman — John P. Wall
Mary Sue Hutchins — Joan Young

General News

Regular Appointments in Air Force Medical Service for WMSC Officers

Reserve officers on active duty in the Air Force Women's Medical Specialist Corps now have an opportunity for appointment in the regular Air Force Medical Service, according to Air Force Regulation 36-31, published March 14, 1950.

These officers must have served on extended active duty with the Air Force Medical Service not less than six months immediately prior to date of submission of application.

To obtain a regular commission an officer must be unmarried.

Physical therapists must have a Bachelor's degree from an approved college or university with major emphasis in physical education or biological science and be a graduate of an approved training course in physical therapy.

These officers will be commissioned as second lieutenants.

Applications will be accepted twice yearly, either between February 1st and April 1st or between August 1st and October 1st of any year. To allow sufficient time for receipt of applications following this announcement, the period February 1st to April 1st, 1950, is extended to June 1st, 1950. All applications will be forwarded through channels to the Director of Training, Headquarters, USAF, Washington 25, D. C.

Applications for Visiting Lecturer to Greece Solicited

The United States Department of State has announced an award under the Fulbright Program for a visiting lecturer in physical therapy to be sent to the University of Athens in Greece for nine months to a year, beginning in the summer or fall of 1950.

The need for physical therapists in Greece has been greatly increased by the large numbers of civilians and veterans who have been disabled by the recent guerrilla warfare. It is proposed to establish a school or course in physical therapy under the joint auspices of the Greek Ministry of Hygiene and the Medical Faculty of the University of Athens to train Greek men and women with previous experience in nursing or in physical education. The Near East Foundation has been particularly active in encouraging this undertaking.

The visiting lecturer would be expected to take a leading part in organizing the school or department, assembling an instructional staff, planning the curriculum, and participating in the instruction. Candidates for the award should have had advanced training in physical therapy and a background which includes practical and administrative experience.

The award will be made for a period of one academic year and is payable in Greek currency. Benefits include round-trip transportation for the grantee, an allowance adequate to cover cost-of-living in Greece during the period of the grant (some adjustment will be made in case of dependents), and a small allowance for incidental expenses essential to the assignment.

Requests for further information or for application forms should be addressed to the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Avenue, Washington 25, D. C. As it is desirable that the consideration of applicants with a view to selection should begin at an early date, applications for the award should be submitted promptly to the Conference Board Committee.

Poliomyelitis Workshop

A *workshop on poliomyelitis* will be offered by the Physical Therapy Department of the University of Southern California in affiliation with Los Angeles County General Hospital and Rancho Los Amigos during a summer session.

The course will be devoted to theory and to practical work in both the acute and convalescent phases of polio. Special emphasis will be placed upon the respirator patient with regard to physiology of respiration, positive and negative pressure and ventilation studies. Practical work will include packing, muscle analysis, muscle examination and muscle re-education procedures.

Eligibility: Graduates of American Medical Association approved schools of physical therapy

Dates: July 5 through August 2, 1950
Time: 5 days per week from 8:30–4:00
Tuition: $64.00
Unit credit: 4 units (semester hours) to the properly qualified therapist

For information relative to the course, write to: Miss Charlotte W. Anderson, Chr., Physical Therapy Department, University of Southern California, Los Angeles 7, California.

For information relative to scholarships, write to: National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5, New York.

V.A. Physicians' Course Scheduled

A third course in Physical Medicine and Rehabilitation is being given at the Veterans Administration Hospital, Hines, Illinois, for physicians from other Veterans Administration hospitals throughout the country. This course, which started April 17, 1950, for a period of ten weeks, is under the direction of Dr. Louis B. Newman, Chief, Physical Medicine Rehabilitation Service at Hines, where Dr. K. A. Carroll is Manager. Dr. A. B. C. Knudson is Chief, Physical Medicine Rehabilitation Division, Veterans Administration Central Office, Washington, D. C.

Coming Meetings

Date	*Organization*	*Place*
August 28–September 1, 1950	American Congress of Physical Medicine (28th annual scientific and clinical session)	Hotel Statler Boston, Massachusetts
June 25–30, 1950	American Physical Therapy Association	Hotel Statler Cleveland, Ohio
May 28–June 2, 1950	American Society of X-ray Technicians	Deshler-Wallick Hotel Columbus, Ohio

Index to Current Literature

Arthritis

Advances in Fighting Arthritis and Rheumatism. Edward F. Hartung. The Crippled Child, April 1950.

Cardiology

The Electric Strain Gauge Ballistocardiograph. Vernon E. Krahl. American Heart Journal, February 1950.

Cerebral Palsy

Achievement Recording for the Cerebral Palsied. Dorothy M. Livingston. The American Journal of Occupational Therapy, March-April 1950.

Assembling Forces for the Cerebral Palsied Child. Henry O. Marsh. The American Journal of Occupational Therapy, March-April 1950.

The Cerebral Palsies, Their Diagnosis, Classification, and Treatment. William D. Dugan. New York State Journal of Medicine, November 1, 1949.

Medical Aspects of Cerebral Palsy. Meyer A. Perlstein. The American Journal of Occupational Therapy, March-April 1950.

Neurologic Sequelae of Erythroblastosis Fetalis. Meyer Perlstein. American Journal of Diseases of Children, March 1950.

Occupational Therapy for the Cerebral Palsied Baby. Elizabeth Grayson. The American Journal of Occupational Therapy, March-April 1950.

Present Day Trends in Cerebral Palsy. Marguerite Abbott. The American Journal of Occupational Therapy, March-April 1950.

Speech for the Cerebral Palsy Patient. Grace Chenoweth Orr. The American Journal of Occupational Therapy, March-April 1950.

Toys Adapted to Cerebral Palsy Children. The American Journal of Occupational Therapy, March-April 1950.

Child Health

An Integrated Maternity, Child Health, and Handicapped Children's Program. Ella Oppenheimer. Journal of the American Medical Women's Association, July 1949.

Chronic Diseases

Dynamic Therapeutics in Chronic Disease. Howard A. Rusk. British Journal of Physical Medicine, January 1950.

Dynamic Therapy in Chronic Disease. Donald A Covalt. Journal of the Indiana State Medical Association, January 1950.

Disability Evaluation

New Devices for Disability Evaluation. The Thumb Ergograph. F. A. Hellebrandt, L. E. A. Kelso, Sara Jane Houtz, R. N. Eubank. Archives of Physical Medicine, April 1950.

New Devices for Disability Evaluation. The Grip Ergograph. F. A. Hellebrandt, Sara Jane Houtz, L. E. A. Kelso. Archives of Physical Medicine, April 1950.

Education

Parents Are Teachers, Too. Freda Kohn. The Crippled Child, April 1950.

Electrical Accidents

Burns from Electricity. G. Kenneth Lewis. Annals of Surgery, January 1950.

Hospitals

A Challenging Design for a Children's Hospital. G. S. Holderness. Hospitals, March 1950.

Hyperpyrexia

Prolonged Fever Produced with Three Injections of Typhoid Vaccine. Ray O. Nonjin, Bedford F. Pace, Hugh B. Drayer. American Journal of Syphilis, Gonorrhea, and Venereal Diseases, March 1950.

Leprosy

The Use of Physical and Occupational Therapy in Peripheral Nerve Lesions of Leprosy. Virginia R. Hatch. Military Surgeon, March 1950.

Multiple Sclerosis

Bellevue Opens Research Clinic for Multiple Sclerosis. Hospital Management, April 1950.

The Rehabilitation Treatment of Multiple Sclerosis and Its Rationale. Rene Cailliet. Occupational Therapy and Rehabilitation, February 1950.

Neurology

Electromyonsis: I. Inhibition of Electrical Activity of Cerebellum. T. Gualtierotti, E. Martini, A. Marzocchi. Journal of Neurophysiology, November 1949.

Neurologic Problems of Handicapped Children. T. J. Putnam. Journal of Exceptional Children, March 1950.

Neurophysiology

Stimulation of Anterior Limbic Region in Dogs. George Clark, Kon Liang Chow, Carrie C. Gillespy, D. A. Klotz. Journal of Neurophysiology, November 1949.

Nursing

Early Ambulation. Daniel J. Leithauser. The American Journal of Nursing, April 1950.

Occupational Therapy

Occupational Therapy for the Cerebral Palsied Baby. Elizabeth Grayson. The Crippled Child, April 1950.

Ophthalmology

Aneurysm in Ophthalmology. John G. Bellows, Viola M. Richardson, Chester J. Farmer. American Journal of Ophthalmology, February 1950.

Organization and Administration

Accidents in Physical Medicine. Richard Kovacs. Archives of Physical Medicine, April 1950.

A New Statement on Hospitals and the Practice of Medicine. Hospitals, April 1950.

Physical Therapy in "The Sunshine State." Marjorie E. Woolley. The Journal of the Canadian Physiotherapy Association, March 1950.

The Rehabilitation Center of San Francisco, Inc.—A Community Project. Hazel E. Furscott. Journal of Rehabilitation, March-April 1950.

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Tendon Rupture Following Colles' Fracture. Edwin David Weinberg. The Journal of the American Medical Association, April 1, 1950.

Paraplegia

The Rehabilitation of the Paraplegic. Harry Kessler, Arthur S. Abramson. New York State Journal of Medicine, January 1, 1950.

Pathology

The Use of Ultrasonic Pulses for the Measurement of Biologic Tissues and the Detection of Tissue Density Changes. J. J. Wild. Surgery, February 1950.

Physiology

The Comparative Effects of Water, Carbonated Water, Sodium Chloride Solution, and Sodium Bicarbonate Solution on Gastric Acid Secretion in Human Subjects. Edward H. Hale, A. C. Ivy, M. I. Grossman. The Journal of Laboratory and Clinical Medicine, February 1950.

Electric Current Transients Through the Human Body. John W. Moore. Journal of Applied Physiology, December 1949.

Poliomyelitis

Aids in Poliomyelitis. Lewis L. Coriell, Alan C. Siegel, Charles D. Cook, Lois Murphy, Joseph Stokes, Jr. The Journal of the American Medical Association, April 22, 1950.

A Concept of Poliomyelitis Based on Observations and Treatment of 6600 Cases in a Four-year Period. A. G. Bower. Northwest Medicine, February 1950.

How One Community Met a Poliomyelitis Epidemic. Elise M. Dunlop, Public Health Nursing, April 1950.

Intensive Graduated Exercises in Early Infantile Paralysis. A. David Gurewitsch. Archives of Physical Medicine, April 1950.

Some Current Concepts in Poliomyelitis. A. J. Steigman. Medical Women's Journal, February 1950.

A Symposium on Poliomyelitis. W. T. Mustard, Mrs. John Palmer, Helen Osthoff. The Canadian Journal of Occupational Therapy, March 1950.

Prostheses

The Performance of Amputees on Motor Dexterity Tests. Harold Geist. Educational and Psychological Measurements, Winter 1949.

Psychiatry

Thyroid Function in Mental Disease Measured with Radioactive Iodine I^{131}. Karl M. Bowman, Earl B. Miller, Morris E. Dailey, Alexander Simon, Berdeen Frankel, Genevieve W. Lowe. The American Journal of Psychiatry, February 1950.

Psychology

Emotional Implications of Handicaps. Marcus Guensberg, T. H. Kanoshe. The Crippled Child, February 1950.

About Books (a bibliography on rehabilitation). Journal of Rehabilitation, March-April 1950.

Rehabilitation

Prevention of Chronic Invalidism. F. A. Hellebrandt. The Journal of the American Medical Association, April 1, 1950.

Speech

Speech Disorders in Childhood. Muriel Morley, Donald Court, Henry Miller. British Medical Journal, March 11, 1950.

Vocational Guidance

Be a Physical Therapist. Viola Bryson. The International Altrusan, December 1949.

Vocational Rehabilitation

Research in Disability Evaluation. F. A. Hellebrandt. Journal of Rehabilitation, March-April 1950.

Abstracts

Internal Derangements of the Knee Joint: Their Diagnosis and Treatment

Herman J. Bearry, M.D., Philadelphia. In ARCHIVES OF PHYSICAL MEDICINE, 31:5:162, March 1950.

Injury to the Semilunar Cartilage:

Conservative Treatment: The knee should be manipulated, if possible, before much swelling has occurred. It may be performed with or without anesthesia, depending upon the pain tolerance of the patient.

If the reduction of the ruptured meniscus has been successful, the patient should be put to bed and the knee kept at full extension. An ice bag or cold compresses should be placed over the injured knee for three or four hours to minimize swelling and to relieve pain. Heat in the form of an infra-red lamp or moist compresses is applied immediately after the cold therapy. Heat will promote relaxation of any muscle spasm and will aid in the absorption of the exudate in and around the knee joint. Massage above and below the knee also will aid in the absorption of any exudate present, promote relaxation of spastic muscles, and maintain muscle tone. Therapeutic exercises, such as quadriceps static contractions, should be started immediately to prevent atrophy of the quadriceps extensor muscles of the thigh.

In twenty-four to forty-eight hours a posterior, molded-plaster splint should be applied, and it must be worn for four to six weeks, or until pain and swelling have subsided. Quadriceps-setting exercises should be performed at least every ten to fifteen minutes while the cast is being worn, and a total of two to three hundred contractions of this powerful group of muscles should be performed daily. Many surgeons will bivalve the cast in eight to ten days to permit galvanic or faradic stimulation and massage of the quadriceps and hamstring muscles. Heavy-resistance exercises such as those first described by DeLorme should be performed as soon as the cast is removed and should be continued for a period of three to four months.

Surgical Treatment: Preoperative Care—The preoperative measures include strengthening and increasing the tone of the muscles and intrinsic ligaments surrounding the knee joint by the graded therapeutic exercises that have been described. If any abrasions and pustules are present on the skin, they must be cleared up before the incision is made into the knee joint.

Postoperative Care—Liebolt and Stein have outlined an excellent program for the postoperative care of meniscectomies.

First and Second Postoperative Days—Passive motion of the knee and lifting of the entire leg is attempted.

Third to Sixth Days—Active quadriceps setting exercises, bilateral; knee and hip flexion; gravitational flexion of the knee by the physical therapist or physician (The knee is supported in the popliteal space and slowly raised. The knee flexes because of the weight of the leg.); active flexion of the entire leg; sitting-up exercises to prevent deconditioning of the entire body.

Seventh to Ninth Days—Active knee flexion, bilateral; mild forced flexion of the knee; gastrocnemius contraction with dorsal and plantar flexion of the ankle; increased active leg flexion, bilateral; raising the legs at the hip, feet together, performing abduction and adduction of the hips and legs.

Tenth to Fifteenth Days—Sutures are removed. Patient is permitted to walk under close supervision to detect any faults in the stride or gait. Five to ten minutes of walking with a rest period of thirty minutes is permitted on the first day of walking. The walking time is increased daily while the resting time is decreased.

Forced knee flexion. Active knee flexion is continued. On the twelfth day the patient should be sent to the physical therapy room, if one is available, to start exercises with the stationary bicycle, rowing machine, and wall pulleys. It is the author's practice to start the patient on the DeLorme resistance exercises at this time and have the patient continue them for many months.

Sixteenth to Twenty-eighth Days—The patient is told to participate in such sports as golf-putting, shuffleboard, bicycling, and walking. If the incision is completely healed, swimming is permitted also.

Goeringer begins active, straight-leg raising on the first postoperative day and permits the patient to use crutches as soon as he is able to flex his knee to a ninety-degree angle.

Injuries of the Collateral Ligaments

Treatment—The patient should be put to bed and the knee supported with pillows. Cold compresses are immediately applied and kept on for a period of four to six hours. Heat is then prescribed to aid in the healing process and in absorption of any effusion. Aspiration of the effusion may be necessary to relieve the tension and to remove any blood which may be present in the knee joint.

All that is necessary in mild sprains is immobilization with a pressure dressing or an elastic bandage and prohibition of weight bearing for three to six days or until pain has disappeared. After three to six days the patient is permitted to bear weight with the aid of a cane and an elastic knee support or a Bigney adhesive strapping. Massage, heat, and active resistance exercises should be started early and continued for several months after the patient has become ambulatory.

Quadriceps exercises are continued throughout the entire period of immobilization. If the surgeon will bivalve the cast, heat and massage may be given. Heavy resistance exercises should start when the cast is removed and be continued for four to six months thereafter.

Injuries to the Cruciate Ligaments

Treatment—Complete, prolonged immobilization in a position of approximately 15 to 20 degrees of flexion for a period of two to three months is necessary to promote complete healing of the torn ligaments. If the knee has shown some improvement at the end of three months, a metal knee-cage should be worn for a period of two to three months more, if necessary, to promote complete healing of the torn ligaments.

Quadriceps-setting exercises should be begun as soon as the cast has been applied and should be continued until more vigorous exercises are prescribed. Active, active assistive, and heavy resistance exercises should not be attempted until the knee shows some stability.

Summary

Preoperative and postoperative care in the form of massage, heat, therapeutic exercises, and proper immobilization is equally as important as any surgical technic to obtain a good stable knee. As in any program of physical reconditioning, a vital and integral part is played by the patient himself.

Basic Principles in the Diagnosis and Treatment of Fractures

Allen F. Voshell, M.D., Baltimore. In AMERICAN PRACTITIONER, 1:1:8, January 1950.

Although there have been many advances and changes in the methods of treating fractures, due to the development of newer metals and appliances, chemicals and drugs, etc., the problem is still one of reducing and immobilizing the bone fragments until sufficient union takes place to allow the use of physical and occupational rehabilitation. The bones and joints of our forebears were of the same type and character as ours, and nothing has altered the basic anatomic and physiologic features of these structures or the changes incident to injury or disease. The newer means and wider range of travel, the use of more machinery, etc., in brief, the more complex and intricate existence of human beings these days, have caused the development of many more of the more severe types of injury, such as comminuted and compound fractures. However, a very great number of fractures still are due to falls and leverage forces of various kinds. In consequence, I do not feel any hesitancy in discussing features of diagnosis and treatment, of apparently elementary and fundamental character, based on the mechanics of anatomy and the physiologic changes of development. Experience shows that too much dependence is being placed upon gadgets and machinery in the care of fractures and not enough on conservative, sound, brain work and an understanding analysis of the whole problem. The latter includes the patient; the mechanics of the cause of fracture; the simplest treatment method consistent with the best result, with the least risk and loss of time; early use of physical and occupational therapy; psychologic, social, and economic adjustment; and similar factors.

Extra-peritoneal, End-to-end Suture of the Femoral Nerve

Campbell Gardner, F.R.C.S. (C.), and Harold Elliott, M.D., Montreal. In THE CANADIAN MEDICAL ASSOCIATION JOURNAL, 62:1:61, January 1950.

Femoral nerve lesions are rare, and few have been recorded. In a series of over five hundred nerve injuries, there were only three examples of femoral nerve injury. Two were incomplete and in this third example, end-to-end suture was obtained by the method described.

Summary: (1) Few detailed experiences of femoral nerve injuries are recorded.

(2) Femoral nerve injuries are to be expected in lower abdominal missile wounds; and the experience in World War II has demonstrated that these wounds are not necessarily fatal.

(3) Femoral nerve suture may not be possible as early as in other peripheral nerve injuries, but recovery can be expected, even though delay is as long as two years after operation.

(4) Rehabilitation and tension (quadriceps) exercises are especially important during the recovery phase so that the patient may not become "wedded" to his brace and allow femoral muscles to develop disuse atrophy.

Power Exercises in Medicine

George Darwin Wilson, M.D., Asheville, N. C. In SOUTHERN MEDICAL JOURNAL, 43:1:29, January 1950.

Power exercises supersede time-consuming, active and passive exercises. These exercises are the final step of physical rehabilitation and give a definite yardstick for the statement that maximum medical benefits have been reached.

The author points out the value of using power exercises as a method of evaluating efficiency of medications, which usually are evaluated by the patient's statement of well-being or can be evaluated by expensive and elaborate laboratory procedures found only in the large hospital centers.

Power exercises are one of the last physical therapy procedures in rehabilitation of hemiplegia. The usual sequence of physical therapeusis in hemiplegia, when indicated, begins with electrostimulation, muscle re-education, and passive and active exercises followed by power or progressive resistive exercises. Once a neuromuscular unit begins functioning, much wasted time on passive or active exercises can be avoided by using power exercises.

Power exercises are prescribed as home-care follow-through to office practice by use of inexpensive apparatus such as a bar pulley-weight adjustable to any door frame in the home. By testing in the office the number of weights that can be added for an arm or leg, the patient can continue prescribed power exercises at home. Of interest is the fact that an added weight of three to five pounds in a pocketbook hung on the paralyzed, flexed hand assists walking, often without crutches or a cane.

In incomplete paraplegia, resistive exercises may be the physical procedure to permit ambulation progressing to independence with or without braces, crutches, or canes.

Power exercises are a physical adjunct to the maximal recovery in the shortest time of some arrested, or reversed, pernicious anemia cases.

Rehabilitation of peripheral nerve injuries, especially following surgery, by physical therapy modalities is gratifying and the prognosis is good. Resistive exercises play the climaxing role in the final recovery.

Power exercises in chronic poliomyelitis complete the physical management and continue where muscle re-education, and passive and active exercises leave off. Prescribing heavy resistive exercises is guided by muscle testing and may be started on a muscle graded "2" or "fair."

Power, or progressive, resistive exercises offer a valuable means of evaluating the efficiency of a medicine. These exercises are especially valuable in measuring physiologic effects of medicines that act directly or indirectly to improve muscular strength or are administered to relieve muscle spasm. In neuromuscular conditions some medicines are administered empirically without a means of evaluation other than the patient's own statement of his general condition. In addition to evaluating the efficiency of a given medicine these exercises may be a means of determining the sufficiency of dosage.

Medications administered in peripheral vascular diseases may be evaluated by resistive exercises. Besides measuring the distance walked by a patient with peripheral vascular disease, before intermittent claudication begins, after a given medicine, the plantar-flexors, hip flexors, or knee flexors may be measured in pounds of weight lifted before cramping. A larger number of weights lifted gives an index of the medicine's efficiency.

Intermittent Claudication: Clinical Study

A. M. Boyd, A. H. Ratcliffe, R. P. Jepson, and G. W. H. James. In JOURNAL OF BONE AND JOINT SURGERY, 31-B:521, August 1949. Abstracted in JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 142:8:599, February 25, 1950.

Boyd and his associates report on 276 cases of intermittent claudication. Lewis showed by occlusion-plethysmography that the arterial bed was dilated at the time of the onset of pain. The authors point out that in limbs with arterial disease the distributive pattern of the arterial supply is altered either by a general narrowing of the arteries or by local thrombosis. It is the arterial inaccessibility of certain parts of the muscles that causes impaired nutrition and accounts for pain on exercise. Deficiency of circulation in the lower limbs may be classified under three headings: (1) primary thrombosis of the popliteal artery, (2) juvenile obliterative arteritis, and (3) senile obliterative arteritis, and, under the third, (a) diffuse obliterative arteritis, (b) secondary popliteal thrombosis, and (c) secondary femoral thrombosis. Primary thrombosis of the popliteal artery and juvenile obliterative arteritis are usually included under thromboangiitis obliterans. In most young patients the cause of claudication is traumatic thrombosis and not arterial disease. Juvenile obliterative arteritis comprises a group of causes corresponding to those described by Buerger and may be a pathologic entity. The term juvenile obliterative arteritis is restricted to obliterative arteritis beginning in the feet and following a characteristic clinical course. The condition seldom begins after the age of thirty-five years. Senile obliterative arteritis includes the degenerative arterial changes commonly associated with increasing age and included under the general term arteriosclerosis. The authors describe methods for assessment of the severity of disease, including study of the clinical features, arteriographic findings, results of procaine infiltration, and examination of the patient on a walking machine. They present a discussion of Buerger's exercises, contrast baths, intermittent venous occlusion, and suction pressure; lumbar ganglionectomy and paravertebral block with phenol; Vitamin E (alpha tocopherol) therapy; treatment with thiouracil; internal popliteal myoneurectomy and division of the external popliteal and posterior tibial nerves; and tenotomy of the tendo Achilles. The latter, they conclude, should replace myoneurectomy in Type 3 cases where the blood supply is so far reduced that vascular stability cannot be achieved and might apply in Type 2 cases in which there is persistent pain.

Proprioceptive Modification of Reflex Patterns

G. N. Loofbourrow and E. Gellhorn, Minneapolis. In JOURNAL OF NEUROPHYSIOLOGY, 12:6:455, November 1949.

Preoccupation with the response of the stretched muscle in studies of the "myotatic reflex" has tended to obscure the fact that either passive stretch or active tension of a muscle evokes proprioceptive impulses which influence the motor centers of other muscles. This spread of influence among spinal centers has been shown by Sherrington (an incidental finding), Cooper and Creed, Denny-Brown, Lloyd, and Loofbourrow and Gellhorn. These findings stand in opposition to the time-honored statement by Liddell and Sherrington to the effect that the stretch reflex, unlike those provoked from skin nerves and other sources outside the muscle, remains confined to the muscle stretched, and even to the stretched portion of a muscle.

Summary

Afferent stimulation of several peripheral nerves in cats and monkeys under Dial (Ciba) elicited specific response patterns (EMG's) in leg muscles. Proprioceptive modification of these patterns was achieved through (a) fixation of joints to extend certain muscles, and (b) directly loading specific muscles.

(1) The biceps complex (Bi-EC-BR) customarily responds to afferent stimulation of the superficial radial, ulnar, dorsal cutaneous (branch of ulnar), and median nerves.

(2) The triceps complex (Tri-FC) responds to afferent stimulation of the cutaneous antebrachii medialis nerve.

(3) Afferent stimulation of the medial plantar nerve consistently excites a strong response in tibialis anticus. A hamstrings response is frequently associated with it but its EMG is weaker. The quadriceps, gastrocnemius, and soleus are silent or nearly so.

(4) Stimulation of the sural nerve typically results in strong excitation of the gastrocnemius and hamstrings, with the quadriceps and tibialis silent and with soleus showing a slight response.

(5) The response (to afferent nerve stimulation) of the entire Bi-EC-BR complex is augmented by fixation of the elbow at an obtuse angle. This effect is attributed to the development of greater tension in the biceps and so to stronger excitation of proprioceptive endings within it.

(6) The Bi-EC-BR complex is facilitated also by fixation of the wrist in volar flexion. The facilitation is attributed to proprioceptive reflexes arising in the stretched extensor carpi as actual tension develops.

(7) Loads directly applied to the biceps or to the extensor carpi facilitate the reflex response of the Bi-EC-BR complex.

(8) Fixation of the elbow at an acute angle facilitates the reflex response of the Tri-FC complex due to enhanced proprioception in the stretched triceps.

(9) Fixation of the wrist in dorsiflexion facilitates the reflex response of the Tri-FC response through enhanced proprioception in the carpal component of the complex.

(10) Fixation of the ankle in plantar flexion (stretching the tibialis) facilitates the tibialis-hamstrings reflex response. A load on the tibialis tendon has the same effect.

(11) Fixation of the ankle in dorsiflexion enhances the reflex response of the hamstrings and the gastrocnemius. A load on the gastrocnemius portion of the Achilles tendon has a similar effect.

(12) The facilitation of synergists and "associated synergists" by the means described is often accompanied by a reciprocal inhibition of antagonists, as illustrated by the inhibition of a reflex response of the tibialis by a load on the gastrocnemius.

(13) Co-innervation of an antagonist may be brought about by intense proprioceptive facilitation of the agonist (with the antagonist at a corresponding disadvantage).

(14) It is emphasized that the proprioceptive "facilitation patterns" are the same as the activity patterns (muscle groups) elicited by cortical stimulation, by reflex (afferent nerve) stimulation, and by the passive stretch of muscles.

Production of Postural Tremor

Eric W. Peterson, H. W. Magoun, Warren S. McCulloch and Donald B. Lindsley, Chicago. In JOURNAL OF NEUROPHYSIOLOGY, 12:6:371, November 1949.

Disparate consequences follow lesions of various parts of the midbrain. Information concerning several neurological symptoms has been obtained, but we are chiefly concerned with a tremor which appears during the maintenance of posture. Destruction of various parts of the subthalamus and mesencephalic and pontile tegmentum has permitted more precise determination of the nuclear aggregates or fiber tracts whose injury is followed by such tremor.

In a series of monkeys with injury to various parts of the midbrain and pons, postural tremor resulted when lesions were present in the ventral tegmentum of the midbrain, dorsal to the central part of the substantia nigra. If the lesion was unilateral, tremor was present on the opposite side. Lesions involving this critical area, but extending also beyond it, did not produce postural tremor. Such tremor did not follow injury to other regions of the anterior brain stem, but did occur after lesions of the cerebellar nuclei.

Electromyography of postural tremor in these monkeys showed regular alternation in agonists and antagonists at rates of 6-8/sec., augmentation of tremor during passive stretch of an affected muscle and during its participation in postural adjustment, augmentation during excitement, disappearance of tremor during active movement, and absence of a single frequency of tremor for the whole body.

Action tremor was encountered in a number of monkeys, the common feature of whose lesions was injury to the superior cerebellar peduncle. Electromyography of action tremor showed more dispersed bursts of potentials, occurring less frequently and regularly than in postural tremor, and without clear-cut alternation in agonists and antagonists.

Observations bearing upon hypokinesia, comatose states, and spasticity following anterior brain stem lesions are also presented.

The General Practitioner Looks at the Feet

Edwin Matlin, M.D., Mt. Holly Springs, Penna. In AMERICAN PRACTITIONER, 1:2:172, February 1950.

One of the most common complaints to be found in all walks of life, one which is seen least frequently by a physician, one which is of least interest to a physician, and one which properly belongs in the realm of the physician, is that of painful feet.

It has been estimated that 80 percent of the population has at one time or another been bothered with "foot trouble," and yet only a handful are treated in a general practitioner's office. The explanation is, of course, that they are referred by the family physician, or by a friend, to podiatrists, chiropodists, and sometimes to unscrupulous persons.

It is a fact that when interest is lost in any part of the practice of medicine there arises a group of people, who may be legitimate, or cultists, or unscrupulous persons, who are only too happy to take over a lucrative field. When the physician evinces, generally, an interest in heretofore largely ignored phases of medicine, then these offshoots disappear, as the midwife disappeared when the physician took over the practice of obstetrics.

The practitioner's lack of interest in foot-care springs directly from his lack of knowledge. In medical school, little or no attention is given to the treatment or diagnosis of foot ailments.

In this paper a few of the more common disorders and their treatment are pointed out.

Rest and short-wave diathermy treatment may be combined, the first to avoid unnecessary trauma, and the second to increase circulation to carry off the toxins produced by destruction of tissues following trauma. They are indicated in acute conditions, after the first twenty-four to thirty-six hours. In acute conditions, I feel that strappings or the application of heat and cold are contraindicated. The trauma causes edema due to the rupture of small blood vessels. Strapping at this time may interfere with the circulation as the swelling progresses, and the application of either heat or cold by increasing the circulation and causing a vasodilatation will increase the swelling and bleeding also.

A few of the more common difficulties are described, and methods of treatment are outlined. An awakening of interest on the part of the general practitioner will result in a more adequately cared-for patient.

Arthritis—Plan for Attack

Prepared by the Canadian Arthritis and Rheumatism Society, Ottawa. In THE CANADIAN MEDICAL ASSOCIATION JOURNAL, 62:1:54, January 1950.

In preparing this plan, the Canadian Arthritis and Rheumatism Society has been deeply conscious of the magnitude of the problem which arthritis presents. It has been equally aware that a very great deal can be done to relieve both the suffering of individuals, and the present drain on the nation's economy. The plan has been prepared as a basis for practical discussion and subsequent action by those associated with the Society, as well as for all physicians and thoughtful citizens interested in the control of rheumatic diseases.

Importance of Social and Vocational Rehabilitation

The most extensive treatment will still find many patients developing severe disabilities, and others in whom disabilities cannot be wholly corrected. Yet many of these will have families to support. Thus, their medical and physical rehabilitation should be linked from the beginning with measures for social and vocational rehabilitation. Rehabilitation should start while patients are under treatment. In many instances, the treatments provided will only make possible better adjusted relationships between the patients and their disabilities. Rehabilitation can contribute to patient-morale, and the group stimulus or therapy achieved by the concentration of patients of like disability at special treatment centers makes rehabilitation easier.

Systemic Thermotherapy: With Special Reference to Hot-Air Baths

VICTOR R. OTT, M.D., Zurich. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 13:1:9, January 1950.

Apart from warm water and from the radiant heat emitted by a fire, hot air is probably the oldest means of heating the human body; certainly, it also has been applied in treatment of sick men since ancient times. Yet, during a long period, the scientific basis of this therapeutic procedure did not find much interest on the part of the medical profession, although the basic problems had been clearly realized as long as 174 years ago.

With reference to his investigations on the Finnish hot-air bath, the author discusses the physiological and patho-physiological bases of systemic heat treatment. The most important aspect of the physiological effects of systemic heat treatment is its influence upon the tonic level of the whole autonomic nervous system—not only of the sympathetic or parasympathetic alone, that is to say, that an "amphotonic" autonomic reaction is produced by physical hyperthermy.

This theory explains the well-known fact that the individual condition of the patient is broadly decisive in regard to the effects of systemic physical treatments; it also explains the many contradictions of experimental observations of different functions and in different patients. Furthermore, the theory allows us to establish the therapeutic indications on a secure and rational basis.

The Effects of Micro-Waves: A Preliminary Investigation

A. C. Boyle, M.D., M.R.C.P.; H. F. Cook, B.Sc.; and T. J. Buchanan, M.A.; London. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 15:1:2, January 1950.

Up to the present time, reports in the literature concerning the biological and other effects of radio-waves below thirty centimeters in wave-length are not extensive.

Summary

Current literature on micro-wave therapy is briefly reviewed.

A new method of irradiation is described, and the thermal effect on human tissue is recorded.

The results of overdosage in the laboratory animal are described, and a preliminary observation is made upon the effect of a metallic foreign body in the field of irradiation.

These results, together with the future possibilities of micro-waves in medicine, are discussed.

Postural Changes in the Circulation of Surgical Patients as Studied by a New Method for Recording the Arterial Blood Pressure and Pressure Pulse

Lysle H. Peterson, Kenneth F. Esther and Robert D. Dripps, Philadelphia. In ANNALS OF SURGERY, 131: 1:23, January 1950.

Many analyses have been made of the circulatory response of man to the assumption of the erect position. The changes in cardiac output, arterial blood pressure, and pulse rate which occur have been recorded in normal individuals and in patients under a variety of conditions. Measurements of the increase in volume of the lower extremities in the head-up position have been reported by Asmussen and his co-workers. They concluded that approximately 550 cc. of blood could be pooled immediately in the legs as soon as the upright position was assumed and that another 400 cc. might be lost from the circulation as a result of increased hydrostatic pressure in the veins and filtration of blood through the capillary walls. The capacity of the legs to hold blood is unquestionably established. The effects of postural changes on the circulation, however, have not received the attention they deserve in routine surgical practice. It is our hope in this paper to illustrate certain circulatory alterations, beneficial as well as detrimental, which we have noted in patients moved into and out of the various positions, and to emphasize again the implications inherent in these changes.

With a new method of recording intra-arterial pressure and pressure pulse waves we have been able to observe a number of postural changes, in the circulation, which are of practical significance to the surgical patient. Marked hypotension may follow return of the patient from the lithotomy to the horizontal position. Yet paradoxically this pooling of blood in the lower extremities, which under the circumstances just noted is so harmful, may be turned to the patient's advantage. Thus, in conditions of low blood pressure primarily caused by vasodilatation, elevation of the legs, i.e., autotransfusion, may be of great help. We have seen such a measure correct a severe hypotension which has resisted the intravenous administration of pressor drugs. The method we propose is more physiologic than drug therapy, and it acts more quickly.

Physical Medicine Management of Facial Nerve Paralysis

Lt. Col. Charles D. Schields, M.C., U.S.A.; Col. E. M. Smith, M.C., U.S.A. In MILITARY SURGEON, 106:2: 122, February 1950.

Paralysis of the musculature innervated by the facial nerve results in a characteristic deformity that has both physical and emotional implications. Immediate support of the paralyzed muscles and prevention of their atrophy, in anticipation of a renewal of nerve-muscle relationship, is indicated in every facial palsy.

(1) Paralysis of the facial nerve produces a characteristic deformity.

(2) Physical measures of therapy are indicated in all cases of facial palsy where renewal of nerve-muscle relationship is anticipated.

(3) The physical measures that are recommended for the affected muscles are support, heat, electrotherapy, electrodiagnosis, re-education, exercise and massage.

(4) Overstretching of paralyzed muscles by the unaffected, or sound, side must be prevented, as this is a factor in delay or lack of recovery.

(5) When voluntary muscle capacity returns to the previously paralyzed facial muscles, the non-affected side should be manually restrained in exercise to prevent hypertrophy of the nonaffected muscles and overstretching of the affected group.

Volkmann's Ischemic Contracture

Franklin R. Martin, Founder and Managing Editor, 1905-1935, SURGERY, GYNECOLOGY AND OBSTETRICS. In 90:2:244, February 1950.

The last decade has evolved more effective treatment in the early ischemic stage. Because of the trophic disturbance, great care must be used to avoid pressure sores. Clever technics have been worked out with splints and elastic traction. Active, rather than passive, exercise will re-establish function. Stimulation with galvanic current may be of value. Persistent gentle effort will salvage some function in hands which appear hopeless. In the worst cases, operation is of real benefit. Exploration of nerves and elongation of tendons may be performed early. In older cases, carpal resection is simpler than shortening of forearm bones to relieve inveterate flexion contractures.

Ischemic contracture is still the most tragic complication of elbow and forearm injuries. Volkmann's description of the entity is still accurate but his pessimism about treatment must be abandoned.

Bracing for Cerebral Palsy

Winthrop M. Phelps, M.D., Cockeysville, Md. In THE CRIPPLED CHILD, 27:5:10, February 1950.

It must be remembered that cerebral palsied children never have learned the fundamental motions of the arms, legs, tongue, and the rest of the body.

The child who has had some condition present, either from birth or shortly after, never has had an opportunity to learn any of the fundamental patterns. This child differs greatly from the child who previously learned the patterns and then lost them through a paralytic disease of one sort or another.

One method of training in these primary patterns consists of starting with the simpler patterns, and working up to the more complicated ones.

This is the essential of treatment, actual education. "Re-education" does not accurately describe the process; and although "physical education" has other implications, that is what it consists of. These children, rather than being educated physically from a given point to a higher point of skill, are educated from a very low primitive point of skill, up to, we hope, the normal level.

There can be no substitute for this education, and it is done under four general headings: physical therapy, which teaches arm and hand skills; speech therapy; and the use of apparatus. The latter, sometimes called functional therapy, teaches the child actual activities rather than primary motions. But the other three steps, of course, have to precede it.

In carrying out this program it is necessary to give the child as much help as possible, so the author has three general groups of what might be called adjuncts to treatment—braces, drugs, and surgery. All are useful in certain instances and in certain types, but all definitely are not useful in other types.

There are, in general, three kinds of braces: first, supportive braces, second, corrective braces, and third, control braces. Supportive braces are used in only the most unusual cerebral palsied cases.

The two types of braces most used in cerebral palsy are corrective braces and control braces. Control braces can be a great aid to athetoids. Athetoids may be able to smooth out a slight distortion of gait, but those with marked distortion, who walk all day without control, are going to develop a very bad and fixed habit. The only remedy is to use braces which will only allow a perfectly straightforward flexion-extension gait to be used with the feet in the right position, and not allow the spreading, twisting, and turning. This brace would teach the child a better-appearing walk. However, a brace will not produce any kind of a cure by itself. It must be used in connection with the therapies previously mentioned.

If the child wears the brace two or three years and develops a nice-looking walk, when the brace is taken off the child will continue to walk with the type of gait which has been taught by his brace. But after about half an hour, the unwanted motions will begin again and his gait will become poor; after a year or two more, his walk will remain good for perhaps half a day. After another year or so the walk will remain good all the time and the braces can be completely discarded. The process usually takes several years.

When a child is first put into such a brace there is a tendency, especially in the athetoids, for his muscles to fight the braces. Gradually he learns to relax and to let the brace do the moving for him from the relaxed position.

Joints in the braces for athetoid children must move very easily and freely; there should be no resistance to motion whatever. The only way to accomplish this is to use a ball-bearing joint with a side-thrust bearing in it so that no matter how much the child pulls one way or another, or twists, it will still move freely.

These braces have to be made removable from the shoes. Anyone who has ever tried to put shoes on a twisting, squirming athetoid has found it impossible when the shoes are attached to the braces. The shoes must be put on first, with the heel placed well down in the shoe; then the brace can be attached by spreading the heel caliper and putting it into the slot in the heel of the shoe.

An athetoid oftentimes will have so much tension that he is started with braces for only half an hour or fifteen minutes at a time, because they are so exhausting. Sometimes it is an extremely long and gradual process to get the child up to brace tolerance, as it is called, because the whole principle is to condition his muscles to allow the braces to make the correct movements.

The same brace which is most useful in the athetoids is used by spastics to counteract their tendency toward a scissors gait.

In the severe ataxias, it was found necessary to use a similar control brace to keep walking-pattern smooth and to prevent the learning of a distorted walk.

The control brace is one of the two chief types of braces used in cerebral palsy, and is definitely not indicated in all children. Probably 30 to 40 percent of the children need this kind of brace.

The corrective brace is the second important type. It is very interesting to realize that in many instances children develop deformities which are not a part of their cerebral palsy at all. One of the most unfortunate sights is the adult cerebral palsy who walks with the knees and the toes turned in. On examining palsied children carefully, it is found that in most cases there is no more spasticity in the internal rotators than there is in the external rotators, and that one cannot, on the muscle examination of such children, explain why they walk that way. Then one discovers that they have been late in learning to walk. What have they done in the meantime? They have been sitting on the floor with their feet out behind, turning the knees in and putting the feet in the extended equinus position. They sit this way for hours every day.

Careful X-ray studies in a number of adult cerebral palsied persons with distorted walk show that when the hips are in the straight lateral line, the knees are internally rotated about 90 degrees.

The only possible solution for these adults is an operation on the thigh bones to rotate them until the knee and hip are aligned. It is not a condition of the muscles, nor is it a spastic or athetoid characteristic; it is an actual twist of the bone of the thigh resulting from sitting too long with the feet out behind and the knees turned in and flexed.

In such a condition, we have found it possible to use two leg braces with knee joints and ankle joints, correcting these two braces with a rotator strap, so that as the patient walks the legs will be turned out, and the correction will, if persisted for a long period of time, gradually twist the bone in the other direction. If this is done during childhood, malformation can be corrected without the necessity of surgery later.

This type would, therefore, be a corrective brace. A more common corrective brace is the short brace for the toe-walking child, especially the hemiplegic child who

walks on his toes. In the past when the heel cord was tested and found short, it was customary to operate on the heel cords to lengthen them. The number of heel operations on such children usually averaged three before they completed their growth. It eventually was found that the spastic tendon does not grow as fast as the bone in the leg, and hence, usually after an operation has corrected the situation, when the bone grows longer, the cord will become tight again. It was determined that the chief difficulty was the position of the foot in bed at night.

A night brace has been devised to correct this heel cord difficulty. It, too, is made separate from the shoe, with the toe-cap cut out of the shoe. However, if the brace is removed before growth is complete, results would be the same as if the heel cord had been operated on, and the cord would again shorten. Thus after the foot is in a corrected position, the brace must be worn throughout the growth period until the child is 16 or 17 years old. When the bone of the leg has attained full growth, there is no further tendency for contracture to occur and the patient will have an absolutely normal gait.

There are similar braces for straightening and correcting the knees and other joints for which the same principles hold true.

In summary, two main types of braces, the control and corrective braces, are used as aids or adjuncts in the rehabilitation of the cerebral palsied child. The part they play is definitely the part of an adjunct to treatment—they should be used only when very definitely indicated.

What Every Physician Should Know about Prescribing Physical Therapy

Gordon M. Martin, M.D., Rochester, Minn. In JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 142:7:474, February 18, 1950.

Any consistently successful use of physical therapy is dependent on accurate prescription and guidance by the physician. The major purposes of written prescriptions in physical therapy are: (1) to instruct the physical therapist in the procedures to be carried out, (2) to insure the physician that his orders will be followed and (3) to provide an adequate record of treatment given.

Before physical therapy is prescribed, the following questions should be considered: (1) Has a correct or adequate working diagnosis been established? (2) Has physical treatment proved beneficial for the condition diagnosed? (3) What physical therapy procedures may be indicated and what procedures may be contraindicated? (4) What results are anticipated? (5) How many treatments may be needed?

When patients are not selected with care, poor results from physical therapy will occur. Patients who have hopeless conditions and certain functional complaints benefit little. Most patients whose complaints are primarily functional should not receive physical therapy unless they understand the functional aspect of their problems and the place of physical therapy in their treatment.

A most serious pitfall which arises too often in the prescription of physical therapy is that a physical therapist, with limited medical training, is expected or advised by the physician to recommend the procedures to be used in the treatment. In these instances the physician is sponsoring the unethical practice of medicine by technical personnel not qualified or licensed to practice medicine.

There are certain essentials that should appear on every physical therapy prescription. These include (1) the diagnosis, (2) parts to be treated, (3) specifications regarding the procedures to be used, (4) special instructions regarding the removal of splints, braces or dressings during treatment, or cautions regarding anesthetic areas, (5) an outline of what home instructions are to be given, (6) the number and frequency of treatments and (7) the date for re-examination.

It will be possible to outline only a few of the main principles to be considered in prescribing the physical procedures of thermotherapy, hydrotherapy, massage, electrical stimulation, therapeutic exercise and ultraviolet therapy.

Thermotherapy—When vasodilatation, relief of pain or muscular relaxation is desired, heat may be prescribed as a therapeutic agent. It is often used to prepare a part for massage and therapeutic exercise. The thermotherapy prescription should include (1) the source, such as short-wave diathermy or infra-red lamp, (2) the part to which the heat is to be applied and (3) the dose in terms of time of application and intensity.

Hydrotherapy—In prescribing treatment utilizing the Hubbard tank, the hot-tub bath, the whirlpool bath or contrast bath, the physician should indicate the temperature of the water, the duration of the bath and, if the treatment is local, the part to which treatment should be applied. In prescribing the use of hot packs, the type of packs should be indicated as well as the total time for packing and the number of changes of packs that are expected.

Massage—Massage as a therapeutic procedure often is misused. Its physiologic effects are limited. It is a procedure that may be pleasing to the patient, but it is time-consuming for the physical therapist. The use of general body massage as a sedative should be discouraged. The type of massage should be definitely stated, whether it be stroking, kneading, friction or percussion, or some combination. The prescription should specify whether the massage should be light or deep, or of a stimulating or sedative type. The part to be massaged should be indicated.

Electrical Stimulation—The type of current selected will, of course, depend on the apparatus available and on whether the nerve shows a reaction of degeneration. The prescription should include specification of the nerves or muscles to be stimulated, type of current and frequency of oscillations, intensity of current, approximate number of contractions desired and frequency of treatments.

Therapeutic Exercise—A prerequisite for the successful prescription of therapeutic exercise is thorough evaluation of the malfunction. Muscle tests may be indicated; the status of the bones and joints, as well as the general condition of the patient, should be well recognized. The prescription should indicate exercises within the general tolerance of the patient. The type of exercise should be specified, whether it is to be passive, active, active assistive or resistive, for muscle strengthening, muscle re-education, relaxation or coordination. If resistive exercise is to be carried out, suggestions should be made as to the type and amount of resistance to be used for strengthening certain groups of muscles. If assistive apparatus is to be used, such as a shoulder wheel or shoulder ladder, the exercise bicycle, the pulley board or rowing machine, this should be specified. If crutch walking or gait training is to be a part of the exercise program, details as to the type of gait should be prescribed and preliminary

exercises outlined. For many patients, the therapeutic exercise program is one of the most important phases of the physical therapy. However, many times it results in failure. The chief reasons for failure are: (1) too short or too frequent exercise periods, (2) improperly prescribed program, (3) lack of care in administering and supervising the exercises and (4) lack of cooperation and willingness to work on the part of the patient.

Ultraviolet Therapy—The prescription for ultraviolet light should include the source to be used, such as the hot quartz mercury vapor arc lamp; the dose prescribed should be in terms of the minimal erythema dose.

Each physical therapy prescription must be individualized and designed to meet the specific needs of the patient.

Any physician with some fundamental knowledge of physical procedures can prescribe physical therapy satisfactorily for many of the patients seen in ordinary office and hospital practice.

When a physiatrist is not available, the prescription for physical therapy is the responsibility of the patient's physician.

The prescription should be brief and definite and should contain enough detail to instruct the physical therapist adequately regarding the treatment desired.

Success of physical therapy, in part, is dependent upon the proper selection of patients, the preparation of an adequate prescription with provision for a sufficient number of treatments, regular re-evaluation of the patient's condition and modification of treatment as the condition changes.

Administration of the Physical Medicine Department, Los Angeles County Hospital, during the 1948 Poliomyelitis Epidemic

Elizabeth Austin, M.D.; O. Leonard Huddleston, M.D., Ph.D.; Albert G. Bower, M.D., F.A.C.P., Los Angeles. In ARCHIVES OF PHYSICAL MEDICINE, 31:2:71, February 1950.

In the 1948 epidemic of poliomyelitis at the Los Angeles County Hospital, the physical medicine department was responsible for all physical therapy procedures and personnel and for the discharge of patients.

Under the medical director of the department, the head physical therapist was charged with procuring supplies, orienting new personnel and supervising all employees. This was carried out through senior physical therapists of the permanent staff. As far as possible, members of the department were placed in key positions in the wards because of their familiarity with hospital procedure, and recruited physical therapists were assigned to them as needed.

The ratio of six respirator patients to one physical therapist was maintained whenever possible, and the same ratio was used in wards where there were other severely involved patients. One physical therapist handled ten or twelve less seriously involved patients, and an average of eight patients was assigned to each packer.

A full complement of physical therapists was maintained, seven days a week, by using additional personnel.

Packers were recruited and trained in contagious technic and fundamental packing procedures by the senior physical therapist in the Communicable Disease Unit.

The director of the department set all treatment policies and in addition was responsible for the disposition of all patients. Check-out examinations were done two or three days before the end of the quarantine period, to allow time for arrangements to be made for transfer. A muscle check at the time of discharge was made by the physical therapist, and, if additional hospitalization elsewhere was indicated, a duplicate muscle check, together with a written report of the patient's course in the hospital, was sent to the next hospital.

At the end of quarantine, patients fell into three categories. Those with minor residual involvement only, slight muscle shortening or very slight weakness of the upper extremities, were discharged to their homes with instructions for rest, activity and exercise. Patients with moderate to marked weakness and muscle shortening, or with the latter alone when severe, were discharged to other hospitals. Respirator patients, stand-by respirator patients and those with complications were held until it was thought safe to move them to other hospitals having the required facilities.

After two weeks at home the patients in the first group returned to the outpatient poliomyelitis clinic. At that time another muscle check was done and the patient was examined by the physician in charge to determine the relative amount of muscle shortening and weakness present. It was the feeling of the medical director of the department that nonparalytic patients with poliomyelitis should be followed for scoliosis at six-month intervals until full growth was attained. At the time of this visit patients were discharged to the care of their physicians for continued care if requested. If muscle shortening or slight weakness persisted, they were given detailed instructions for stretching exercises at home and, in addition, were requested to come to the department several times weekly for adequate supervision of exercises and stretching procedures. They were then checked at intervals of three to six weeks to determine progress.

The second type of patient, at the end of quarantine, was that with moderate to marked muscle shortening, tenderness and stretch pain, with or without weakness, for whom additional hospitalization was required. Arrangements for hospitalization were made at the recommendation of the hospital, through the social service department, and the patients were sent out at the end of fourteen days for other hospitalization and, eventually, outpatient care by these institutions.

Patients whose medical condition did not permit discharge constituted the third group. This included respirator and stand-by respirator patients, patients with open tracheotomies or with Levin tubes still in place or who had pneumonia, urinary or other complications.

The personnel required for the care of the respirator and stand-by respirator patients made it extremely difficult to place these patients in other hospitals, and for a time a large number of patients continued to remain in the wards for treatment. Gradually, however, other facilities were developed, and, as the patients' conditions stabilized and it became safe to move them, they were discharged.

A number of patients were moved in the respirator without mishap on special ambulance trucks developed for the purpose.

Dynamic Therapeutics in Chronic Disease

Howard A. Rusk, M.D., New York. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 13:2:34, February 1950.

Today, both Great Britain and the United States are faced with a growing tide of chronic disease with its concomitant disability, which threatens to engulf our national life medically, socially, and economically.

Lacking specific measures to cure many of the chronic diseases, medicine must look to rehabilitation to teach those afflicted with chronic disability to utilize their residual powers so as to live and work as effectively as possible with what they have left. Until medicine finds the specific answers to the problems of the diseases of the heart and circulation, rheumatic fever and arthritis, cerebral palsy, multiple sclerosis, poliomyelitis, and other crippling diseases, we have no alternative except to develop technics in restorative medicine to teach the disabled to live within the limits of their disabilities, but, to the hilt of their capabilities.

It is agreed that a great many of those who are chronically ill must have general hospital care initially. Many remain in the hospital, however, purely because of the lack of any place to which they can go if they are discharged.

One of the great needs is provision for total treatment of the chronically ill patient in terms of his whole problem. Many such patients cannot be rehabilitated to the extent of employability, but a great percentage can be rehabilitated to the point of sufficient self-care to enable them to live at home and require a minimum of aid from other members of the family.

In most of our civilian hospitals, the patient receives no such services. Hospitals complain that the chronically ill are responsible for their crowding, but they do little to provide many of them with the training services that will permit them to leave the hospital.

The problem of providing an integrated service for the chronically ill is a complex one. It affects tremendous numbers of persons, numerous diseases and types of disability, various types of medical and semi-medical institutions and, particularly, all the community-service agencies. There is one facet of the problem which stands out glaringly at the present time. That is the need in our general hospitals for dynamic training programs to enable many of the so-called chronic invalids to live independently within their own homes.

Although we have many fine institutions in the world for definitive medical care and for vocational training, there is but a small handful of agencies and organizations which are equipped to provide for the patient with a physical disability the necessary re-training in those physical skills which are requisite for later vocational training. The physician, in the past, has thought too much about the physiological and clinical aspects of the patient's disability.

Except in a few isolated instances, the physically handicapped person must be re-trained to walk and travel, to care for his daily needs, to use normal methods of transportation, to use ordinary toilet facilities, to apply and remove his own prosthetic devices, and to communicate either orally or in writing. These are such simple things that they are frequently overlooked, but the personal, vocational, and social success of the handicapped person is dependent upon just such simple factors.

For the physician, the practice of rehabilitation begins with his belief in the basic philosophy that the physician's responsibility does not end when the acute illness is ended or surgery is completed; it ends only when the individual is re-trained to live and work with what is left. This basic concept of the physician's responsibility can be achieved only if rehabilitation is considered an integral part of the medical service. Any program of rehabilitation is only as sound as the basic medical service of which it is a part. The diagnosis and prognosis must be accurate, for it is upon them that the feasibility of re-training is determined.

The rehabilitation of the hemiplegic is a typical example of re-training. There are a number of simple progressive procedures in the rehabilitation of the hemiplegic, whose disability is one of the commonest seen in general practice.

In the early stages of treatment, the following procedures should be instituted to prevent deformities: (1) use of a footboard or posterior leg splint to prevent footdrop, (2) provision of sandbags to prevent outward rotation of the affected leg, (3) placing a pillow in the axilla to prevent adduction of the shoulder, (4) quadriceps-setting to maintain muscle strength. All of these procedures are relatively simple and require no special equipment. Their use, however, will prevent crippling anatomical deformities and hasten the rehabilitation of the patient.

The next procedure indicated is the institution of pulley therapy. With the stretching and passive exercise provided by pulley therapy, the range of motion can be increased and adhesions prevented.

Pulley therapy has the advantage over the usual stretching exercises that are done passively, for the patient, knowing his own pain threshold, will proceed to fully-tolerated motion much more quickly. Pulley therapy can also be used to aid in the re-establishment of reciprocal motion patterns.

The patient, at this stage, should be encouraged to sit erect in order to re-establish balance.

Speech therapy, if indicated, should be instituted at this time.

The next progressive stage in re-training the hemiplegic is ambulation, which should be taught in the following stages: (1) the practice of balance in the standing position, progressing to the parallel bars, (2) the teaching of a heel-and-toe gait to minimize clonus and to re-establish normal walking habits, stressing reciprocal motion, (3) a short leg brace in approximately 50 percent of all cases to correct footdrop.

In the advanced stages of re-training, ambulation is continued in the following stages: (1) instruction in crutch-walking, starting usually with the alternate four-point gait, (2) teaching elevation, stressing climbing steps, curbs, stairs, and ramps.

Concurrently with training in ambulation, attention should be given to re-training in the activities of self-care and daily living.

Obviously, the physician himself cannot undertake the actual administration of the re-training, but the therapist or nurse, a volunteer, or even a member of the family can conduct the activities under his supervision. With such a program, many of the complications usually following apoplexy can be avoided and a great deal of time and ability salvaged.

Work, properly prescribed, is one of the most valuable therapeutic tools in the treatment of geriatric patients and those suffering from chronic disease. The problems of chronic disease and of the aging population can be met only by the creation and utilization of abilities, rather than by the building of facilities.

Problems of Institutional Care of the Aged

David A. Bond, Jr., M.D., Rochester, Minn. In THE AMERICAN JOURNAL OF PSYCHIATRY, 106:8:616, February 1950.

The improvements in living conditions and medical care have lengthened the average span of human life. Each year a greater percentage of the population reaches advanced ages, and statistics indicate that this trend will be maintained. Thus there are ever-increasing numbers

liable to degenerative changes, especially in the central nervous system. If the impairment is sufficient to produce serious mood disorder, paranoid delusional systems, advanced deterioration, or difficult behavior problems, the patient is usually admitted to a psychiatric hospital. There is no question that such patients need and deserve the treatment and protection that is provided only by a hospital setting. However, the majority of elderly patients will have only mild memory defects and the general deterioration of aging. These medical care and disposition present complicated problems that are not solved adequately at present either by the community or the psychiatric hospitals. Even greater problems are to be expected in the future as this group increases unless a carefully considered program for their care is formulated. This discussion is concerned primarily with the elderly patient whose outstanding disability is simple deterioration without disturbed behavior or major psychopathologic trends.

The present methods of managing the problems of the aged have proved unsatisfactory and inadequate. Common humanity demands the formulation of some program of care that permits the elderly to maintain dignity, self-respect, and a sense of worth as well as providing physical necessities. This can be accomplished by state institutions designed to provide a program of activities and care suited to the needs and abilities of an aged resident population. In the long run, the total cost of such care will be no greater than the present wasteful and haphazard types of custodial management. In addition, it will permit this ever larger group to spend their declining years in a setting that encourages a sense of personal dignity and utilizes their skills. It has been said, "Three-score and ten years make the upshot of man's pleasurable existence." This does not have to be so if the problem is met carefully by planning and new approaches. Not only will the lives of the aged be enriched, but the public mental hospitals will be enabled to return to their primary function of treating the mentally ill.

Physical Medicine Procedures in the Care of Respirator Patients, Measures Used in the Los Angeles County Hospital during the 1948 Poliomyelitis Epidemic

Elizabeth Austin, M.D.; O. Leonard Huddleston, M.D., Ph.D.; Albert G. Bower, M.D., F.A.C.P.; Los Angeles. In ARCHIVES OF PHYSICAL MEDICINE, 31:2:76, February 1950.

The objectives of physical medicine in the treatment of respirator patients are the same as those for other patients afflicted with poliomyelitis: (1) to allay the acute neuromuscular phenomena of muscle shortening, irritability, stretch pain and tenderness, (2) to prevent or minimize musculoskeletal deformities and (3) to establish patterns of functional motion so that the patient will make the most effective use of residual muscle power.

Patients who manifest respiratory difficulties present special problems in physical therapy technics. Physical therapy procedures are elective procedures and must never interfere with the medical or nursing care of these acutely-ill patients.

Roughly, patients requiring respirator care fall into three general groups: those with bulbar involvement alone, those with spinal involvement alone and those with a combination of the two.

Patients with bulbar involvement alone, who eventually require respirator care, are acutely ill and often have tracheotomies and Levin tubes. Consequently, no physical medicine procedures, such as packs, are used until a patient's condition is stabilized. Occasionally, however, packs are ordered to be applied to one or another extremity for relief of transient pain or tenderness. Positioning, however, is carefully watched.

Patients with respiratory embarrassment, as a result of spinal involvement of either the diaphragm or the intercostal muscles or both, present a different problem. They frequently have marked shortening, tenderness and stretch pain of the back and neck extensors, the intercostals and the shoulder adductors.

When the temperature is below 101° or 102° F., it is possible to use continuous chest packs in an attempt to relieve the chest pain, tenderness and intercostal shortening. In addition, when the patient can be moved, other packs are applied to areas of tenderness and pain in an attempt to relieve him of breathing difficulty.

When the patient is placed in the respirator, all packs are discontinued, except continuous chest packs. When his condition is stabilized, half-packs are begun; that is, upper and lower extremities are packed alternately. Full lay-on packs usually prove too devitalizing.

Positioning is very important to prevent or minimize musculoskeletal deformities in the respirator patient, and, early in the disease, this may be the only method of treatment for which physical medicine can be responsible.

Equipment used for positioning must meet the following requirements: (1) It must be easy to clean; (2) it must be easy to replace (complicated casts and other pieces of apparatus are often lost or destroyed by attendants); (3) it must be simple to apply and (4) it must be light in weight.

The carpenter may design and construct footboards which are simple to adjust and which can be used interchangeably in different types of respirators.

Ankle, knee and hand rolls are used routinely for these patients, and, in addition, pillows are sometimes used for buttocks pads to relieve sacral pressure.

Special care to prevent bed sores is required.

Sand bags are used to position lower extremities to prevent external rotation.

Long sponge-rubber rolls, wrapped in towels or diapers, are used for knee and ankle rolls.

Prevention of contractures and deformities of the hands of respirator patients is a serious problem. A small hand roll is now used which is made in various sizes to fit individual patients' hands. This sponge roll is covered with stockinet and a small strip of stockinet is taped over the roll to hold it on the hand and to hold the thumb in apposition.

Muscle re-education is given for short periods, several times daily, because of the difficulty of working through portholes and because the patient tires easily.

For the respirator patient, the most important part of muscle re-education relates to impaired intercostal and diaphragm function.

As soon as the patient's condition has been stabilized and he has been afebrile for forty-eight hours, the physical therapist makes as complete an analysis of residual respiratory power as possible. This usually is done early in the morning, before the patient is tired. At the first sign of distress, the patient is returned to the respirator, even though the request be based on psychogenic, rather than respiratory, factors. After a short period of rest he may be removed again.

In general, short periods out of the respirator at frequent intervals are more helpful than long periods, which will tire the patient.

Permanent removal of the patient from the respirator is, at present, on an empiric basis and requires a good deal of experience.

It is emphasized that each patient presents an individual problem and must be handled individually. The patient must have confidence in the one who treats him, and the physical therapist must have ingenuity in handling his fears and problems.

Relationship Between Body Position and the Application of Muscle Power to Movements of the Joints

H. Harrison Clarke, Ed.D., Springfield, Mass.; Earl C. Elkins, M.D., Gordon M. Martin, M.D., Khalil G. Wakim, M.D., Rochester, Minn. In ARCHIVES OF PHYSICAL MEDICINE, 31:2:81, February 1950.

Two phases of the research provide the basis for this paper: (1) the amount of muscle strength that may be applied for the same movement of a joint when the body is in different positions and (2) the amount of muscle power applied throughout the range of movements of each joint. Each of these phases is discussed, not as a part of test construction, but as a study of the relationship of test positions to the application of muscle power.

These studies provide objective evidence for the statements that, other factors being equal: a muscle exerts its greatest power when it functions at its greatest tension; the angle at which the muscle pulls is of importance, but probably not of as great importance as the tension; there is probably an optimal position at which each muscle functions best, and this position may be one in which the tension is optimal (not necessarily maximal) and in which the angle of pull provides for the greatest rotary force.

Stabilizing force, or the force exerted parallel to the long axis of the bone, of course, is not measured in this study; but in some positions, such as full extension of the knee, this force may be considerable and in addition to the rotary component measured.

These studies point out only a few problems which need further study in regard to muscle function from a mechanical standpoint. There is still great need for standardization of positions for testing the strength of muscles and an even greater need for an adequate measuring device which will measure a wide range of power.

A Mirror for Use on Respirators

Elizabeth Austin, M.D.; O. Leonard Huddleston, M.D., Ph.D.; Ruth Nygren; Albert G. Bower, M.D., F.A.C.P.; Los Angeles. In ARCHIVES OF PHYSICAL MEDICINE, 31:2:74, February 1950.

As many as 82 respirator patients were treated at one time during the 1948 poliomyelitis epidemic, and it was felt that through the weeks the care and morale of these patients would be helped by properly constructed mirrors.

Mirrors which proved to be ideal were eventually developed. They could be attached readily to any type of tank respirator, could not fall down on the patient, permitted the respirator to be opened without detaching the mirror, and could be adjusted so that the physical therapist or nurse working at the lower end of the respirator could watch the patient's face. The back of the mirror could be used for a reading rack.

Poliomyelitis: Infectious or Metabolic?

W. J. McCormick, M.D., Toronto. In ARCHIVES OF PEDIATRICS, 67:2:96, February 1950.

The marked resemblance in the epidemiology, symptomatology and pathology of poliomyelitis and beriberi is presented in support of the author's hypothesis of Vitamin B_1 deficiency as the basic etiological factor in poliomyelitis. As additional evidence a close parallel is drawn between the recent poliomyelitis outbreak in the Canadian Arctic and that of the island of Nauru (1910) from the nutritional angle.

The modern concept of the virus as a chemical substance, a protein molecule of definite dimension, rather than an ultramicroscopic organism, as previously thought to be, calls for a revision of the interpretation of the Flexner experiments as to specificity and transmissibility of the disease, with consideration of the possibility of the endogenous or metabolic origin of the virus.

It is suggested that the paralytic phenomena in poliomyelitis may be indirectly referable to acute B_1 avitaminosis, precipitated by converging factors which increase the metabolic rate and accordingly the bodily requirement for this vitamin—such as febrile conditions, age, sex, climatic conditions, physical overexertion in work or play, and pregnancy—and that the paralysis may be a secondary metabolic manifestation rather than a primary infectious disease.

The associated virus is regarded as a biochemical substance produced by the disease, which, although capable of producing paralysis in experimental animals by catalytic chemical action in the nervous system, is not necessarily a means of spread of the disease under ordinary conditions. It is suggested that a virus-like substance may be obtainable from the nerve tissues of beriberi victims—an experiment which apparently has not yet been attempted.

Musculofascial Pain: Treatment by Local Injection of Analgesic Drugs

Ralph L. Gorrell, M.D., Clarion, Iowa. In JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 142:8:557, February 25, 1950.

Because the pain associated with many conditions has a tendency to decrease or disappear with little or no treatment, many physicians do not realize the number of persons who suffer unnecessary or prolonged pain. Careful follow-up study over a period of years reveals that certain muscle-fascia pains are never completely relieved by conventional methods of therapy and leave residues of weakness, lessened function, and liability to recur with less provocation.

Pain, formerly supposed to be always protective in nature, actually may harm the organism by (1) preventing full function, i.e., disability due to sprains, (2) causing other muscles to splint protectively the painful area, and (3) setting itself up as a nerve reflex, as an independent disease which persists long after the original cause has disappeared (Leriche).

The patients here discussed have been followed for one to thirteen years. Some control was exercised by knowing the environment, previous diseases, something of the personality, body function, and diet of the patients. While this group was being treated by local injections of analgesic drugs, a larger group with similar conditions were managed by conventional measures (diathermy, manipulation, infra-red rays, rest, and sup-

part). No statistical comparison is possible, but the percentage of dramatic recoveries is much smaller in those receiving the usual forms of therapy.

Pain originates from a trigger point. The trigger point is a focus, a point of irritation set up in muscle or fascia, from which pain travels outward in a regular or irregular manner. The pain does not usually follow anatomic nerve distribution.

Conventional, nonspecific therapy—including heat (diathermy, infra-red rays), taping, belts and corsets, massage, vasodilating drugs, cold, and oral analgesic drugs—often partially relieves the pain but lets the trigger point persist. Manipulation and ethyl chloride spray, properly managed, may cure a trigger point.

Approximately one-half of all patients require only one injection for permanent benefit. The others are told to return in twenty-four to forty-eight hours or at any time that pain is present and persisting. Results are best when the patient works and uses his muscles fully and normally, immediately after the injection.

Summary

A twelve-year survey indicates that local injection of procaine solution cures muscle-fascia pain and often relieves pain due to deep-seated causes. Such cures are permanent, unless the cause is still operative, often dramatic and to be obtained in no other way.

Conventional methods of treatment have their place during diagnostic study and for milder pains. Ethyl chloride spray and manipulation often relieve musculo-fascial pain.

The Hospital and the Practice of Medicine

Arthur C. Bachmeyer, M.D. In HOSPITAL PROGRESS, 31:2:52, February 1950.

Without physicians there can be no hospitals. Without physicians there can be no competent medical service.

The hospital was not an important institution one hundred years ago. In fact, in those days it was the source of great apprehension, and even dread, for those whose misfortunes brought them to its doors. It was regarded largely as a terminal station in life.

While it remains true that a majority of the conditions for which people consult their physicians can be cared for in the office, clinic, or home, the hospital is the sole agency in which all resources for the care and proper treatment of the serious illness are available. These resources are marshalled at a moment's notice by the physician's request or instruction for the benefit of his patient.

The medical profession recognizes the need for and value of hospital services. It realizes that the well-organized and administered hospital makes it possible to render adequate and competent professional service. However, the best of equipment and skilled personnel do not guarantee a high quality of medical care. For this the physician—alone and collectively—through the organized staff of the hospital must be primarily responsible.

Certain other medical specialists, such as in anesthesiology, physical medicine, radiology and pathology, in large measure, limit their professional service to the hospital. Their patients are referred to them or the services they perform are requested by their colleagues on the hospital staff. The specialists' practices differ in form from that of most other physicians. In effect, they are given a monopoly of their services in the hospital. The financial arrangements under which they serve the institution vary widely. Financial relationships often have been the subject of sharp controversies between hospital authorities and these specialists. The basic principles enunciated some years ago by hospital and medical associations continue to be sound and fair; namely, that regardless of the particular scheme of compensation adopted, neither patient, specialist, nor hospital should be exploited. This, it would appear, is a sound principle to follow in all cases in which physicians are compensated by hospitals or related institutions.

It is important to bear in mind that nothing should be permitted to intervene between the physician and his control of his professional service. No authority, hospital or otherwise, can direct the physician's professional service. Hospitals do not and cannot practice medicine. This must remain the prerogative of the physician. Collectively, physicians can and should police their profession. They are responsible through their organized efforts for the maintenance of the highest quality of medical service that it is possible to render the public.

A Comparative Study of the Temperature Changes Produced by Various Thermogenic Agents

Alma J. Murphy, M.S.; W. D. Paul, M.D.; and H. M. Hines, Ph.D., Iowa City. In ARCHIVES OF PHYSICAL MEDICINE, 31:3:151, March 1950.

A comparative study of the temperature changes produced by various thermogenic agents is dealt with in this report. Numerous reports have appeared concerning the thermogenic properties of micro-wave and short-wave diathermy. Recent developments in engineering have made available radiations at several other wavelengths. In this study, determinations were made of the temperature changes occurring in living and dead tissues as a result of irradiation with oscillating currents having a wavelength of 1600 cm., 75 cm., 12.25 cm., 8.5 cm., and 5 cm. and the infra-red portion of the electromagnetic spectrum. The temperatures were recorded at four different depths of tissue and compiled so as to determine the changes in temperature and the temperature gradients in the limbs of living and of dead animals following irradiation with each wavelength.

It is quite possible that much controversy could be avoided by more precise delineation of the terms "superficial" and "deep" tissues as well as standardization of experimental procedures.

The heating efficacy of six different wavelengths in dead and living animal tissues has been studied. Temperatures were recorded with a needle thermocouple at the surface, subcutaneous, 1.5 cm., and 5 cm. depths following two, successive, ten-minute periods of irradiation.

The data collected relative to the temperature elevation following electromagnetic irradiation seem to justify the following conclusions:

(1) Temperature elevations occurred when living and dead tissues were irradiated with 1600 cm., 75 cm., 12.25 cm., 8.5 cm., 5 cm., and infra-red rays.

(2) A greater temperature elevation occurred in the superficial tissues than in the deeper tissues when irradiation was carried out with high frequency electromagnetic waves.

(3) The increment of temperature change was greater during the first ten-minute period of irradiation of living tissue than during the second ten-minute period.

(4) High frequency irradiation caused a greater increase in temperature in dead tissue than in living tissue during comparable heating periods.

(5) The ratio between the temperature increase at 5 cm. depth to that at the 1.5 cm. depth is greater for the longer wavelengths than for the shorter wavelengths.

(6) The ratio of the temperature increase at the subcutaneous level to the temperature increase at 1.5 cm. level is greater for the shorter wavelengths than for the longer wavelengths.

Electrocardiographic Changes Induced by Cold Application to Various Body Sites in Patients with Angina Pectoris—Preliminary Report

Bernard Berman, M.D., and Johnson McGuire, M.D., Cincinnati. In THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, 219:1:82, January 1950.

The intolerance to cold of many patients with angina pectoris is common clinical experience. Episodes of angina may be precipitated by cold drinks, cold food, getting into bed between cold sheets, going from a warm room to a cold bed, walking against wind, or sudden exposure to outdoors. Patients frequently observe that cold weather reduces their exercise tolerance.

Summary.—The effect of a uniform cold stimulus applied to various body sites in patients with angina pectoris is described.

The necessity for particular protection of certain body areas in the presence of cold in patients with angina is emphasized.

The practical use of minimal, uniform cold stimulus, alone, and following the ingestion of food, is discussed briefly.

New Horizons for the Council on Physical Medicine and Rehabilitation

Howard A. Carter, M.E., Chicago. In ARCHIVES OF PHYSICAL MEDICINE, 31:3:158, March 1950.

Although the term "rehabilitation" has been annexed only recently to the name of the Council, its work has already included many of the concepts of rehabilitation, and the Council has considered and ruled on methods employed in that practice. The added functions deal with the psychosocial practices of readjustment and the methods of training to earn a livelihood. The Council, thus, will be called upon to pass judicially on such products as muscle-training units, speech, sight, and hearing rehabilitation equipment, prosthetic devices, and methods of rehabilitation. Equipment for consideration and acceptance will be added which had previously been ruled to be outside the purview of the Council. The Council also will be expected to advise the Council on Medical Education and Hospitals relative to the contents of the curriculums of centers for residencies, postgraduate instruction on the professional level, and schools for lay assistants.

An activity which found its home in the Council on Physical Medicine and Rehabilitation is the investigation of health resorts. The Council regards health resorts as functioning rehabilitation centers. The Council, therefore, is most interested in their medical facilities, their departments of physical therapy, and the willingness of the spa authorities to cooperate with the patient's family physician. This large and important field of medicine requires much development.

The Effect of Contrast Baths on the Peripheral Circulation in Patients with Rheumatoid Arthritis

Joseph P. Engel, M.D., Khalil G. Wakim, M.D., Donald J. Erickson, M.D., and Frank H. Krusen, M.D., Rochester, Minn. In ARCHIVES OF PHYSICAL MEDICINE, 31:3:155, March 1950.

The venous occlusion plethysmograph with the compensating spirometer recorder was used to study the effect of contrast baths on the peripheral circulation of fifty-one patients with rheumatoid arthritis. Patients were divided into three groups. Patients of Group 1 were given contrast baths to the forearms, including the hands; Group 2, to the legs, including the feet; and Group 3, to both the forearms and the legs simultaneously.

Contrast baths were given of water temperatures of 110° and 60° F. (43.3° and 15.6° C.) beginning with an initial period of ten minutes of immersion in the hot water, alternating in the cold and hot water every one and four minutes respectively, and ending with the hot water, making altogether a total of thirty minutes. This procedure produced a maximal average increase in peripheral blood flow of 95 percent in the upper extremities when these alone were treated, 62 percent in the lower extremities when these alone were treated, and 100 and 70 percent, respectively, in the forearms and legs when all the four extremities were treated simultaneously. Forty-five minutes after the contrast bath to four extremities simultaneously, there was still an average increase in blood flow of 65 percent in the forearms and 55 percent in the legs.

An average increase of 0.5° to 0.5° C. in oral temperature was observed as a result of contrast baths to the extremities. The temperature increase was greatest in those patients who received contrast baths to the four extremities simultaneously and least in those patients who received treatment of the legs only.

Higher blood flows and skin temperatures were observed in patients who had a low grade fever than in those whose body temperatures were normal.

A Consideration of Poliomyelitis, Transfer Experiments, and the Inclusion Bodies Produced by Toxic Substances

Ralph R. Scobey, M.D., Syracuse. In MEDICAL RECORD, 163:3:45, March 1950.

The term "virus infection" has been applied, without justification, to a number of human, animal, and plant diseases. It is applied not only to certain diseases because a transmissible agent in the tissues can produce a similar disease in experimental animals, but it has been employed loosely, also, to explain the etiology of a disease when a bacterial etiology cannot be demonstrated.

It is shown in this report that "viruses" and nuclear inclusions can be produced in the body as a result of toxic substances that are introduced into the body.

It is noted that tissue reactions with the formation of "viruses" and inclusion bodies often occur in tissues involved in the excretion of poisons from the body.

The failure of the virus theory of poliomyelitis—after forty years of research—is explained by the fact that the primary causative factor is a toxic substance which is present in food and water in areas and during seasons when poliomyelitis epidemics occur, and that the so-called virus of the disease is formed in the body as a result of the poisoning.

An Aid to Walking for Patients with Spastic Hemiplegia

Leonard J. Yarnshon, M.D., Los Angeles. In ARCHIVES OF PHYSICAL MEDICINE, 31:3:156, March 1950.

Ambulation by patients with hemiplegia differs from normal walking in the following particulars: (1) The pelvis on the hemiplegic side is elevated higher than normal during the swing phase of the step. (2) The center of gravity is shifted beyond the normal center when the body weight is borne on the normal foot and not so far as the normal center of gravity when the weight is carried on the involved leg. (3) The involved leg is maintained extended and is dragged forward through a circumducted arc. (4) There is a shorter time-phase of weight bearing on the involved leg. (5) The step length of the affected lower extremity is shorter than normal. This results in a slow, uneven, and labored gait. Progression is accomplished mostly by the normal leg. The patient appears to be running away from part of himself; at times he looks as if he were walking sideways.

Elevation of the heel and sole of the shoe worn on the normal foot accomplishes the following: (1) It facilitates the breaking of contact between the ground and the involved foot; thus it (a) diminishes or eliminates the positive support reaction and the stretch reflexes and (b) allows for more adequate use of residual voluntary motion. (2) It facilitates ambulation by its effects on reflexes by decreasing the degree of shifting of the center of gravity beyond the normal when weight is borne on the normal leg. (3) It encourages weight bearing on the involved leg. (4) It makes for a more even step relationship between the involved and normal legs both in time and in length of step.

The Use of Physical and Occupational Therapy in Peripheral Nerve Lesions of Leprosy

Virginia R. Hatch, Carville, La. In THE MILITARY SURGEON, 106:5:197, March 1950.

In the years preceding the known results of the sulphones in the treatment of Hansen's disease, the rehabilitation of these patients was given little consideration. Aside from a few cases of the tuberculoid type who had spontaneous disappearance of neural lesions, Hansen's disease was a progressive degenerative process in the human body and there was little hope for a patient's return to a normal way of life.

Recognizing the new hope for these patients under sulphone therapy, Dr. A. William Reggio, Medical Director, Chief, Physical Medicine and Rehabilitation Section, Division of Hospitals, U. S. Public Health Service, came to Carville in June 1947, to study the possibilities for rehabilitation, and to make the necessary proposals for setting up the program if it seemed feasible. As a result of Doctor Reggio's survey, the following proposals for Physical Medicine Studies were made:

Purposes—(1) To find out what can be done by use of physical and occupational therapy in the peripheral nerve lesions of Hansen's disease. (2) in other manifestations of the disease. (3) determine indications and contraindications to the use of the various forms of therapy, physical and occupational.

Types of Therapy to be Studied—Physical therapy: diathermy, high and low frequency, thermotherapy, hydrotherapy, massage, exercise, and possibly light therapy, muscle and nerve testing, crutch walking, etc. Occupational therapy: exercise of muscles and muscle groups, aptitudes, development of hobbies (as a therapeutic aide), prevocational training, special methods of therapy in cases with nerve lesions, therapy for the blind, etc.

Patients are accepted for treatment in the physical and occupational therapy departments by prescription only. Clinics are held to examine patients who are new to the department. Attending the clinics with the consultants are the resident medical staff, Doctor Winokur, Mr. Lambur, who is prosthesis- and brace-maker, the physical therapist, and the occupational therapist. Doctor Alldredge prescribes braces and shoe corrections, checks the fitting of the prostheses, as well as advising on treatment of patients coming to the clinic for the first time.

The literature on Hansen's disease gives virtually nothing on the specific use of physical and occupational therapy as treatment for peripheral nerve involvement caused by this disease. In physical therapy early corrective splinting is instituted wherever applicable, followed by a heat modality, which in turn is followed by electrical stimulation of the involved muscles and nerves, together with massage and muscle re-education. This is done in both upper and lower extremities. In December 1948, a variable-frequency wave generator was added to the physical therapy equipment to be based first for testing a series of hand cases, and then for giving muscle stimulation. Most of the cases treated in this manner have improved to some extent. Now, on admission, each new patient is given an electrical muscle test in order that similar treatment may be instituted as early as possible. In March 1949, a thermostatically controlled paraffin bath was procured. It is too soon to reach definite conclusions on the value of this treatment, but it is felt that it causes less dryness of skin, improves circulation, and provides a higher degree of heat with less discomfort. It has given considerable relief in some cases of painful neuritis. Diathermy and whirlpool baths are still being given in some cases. Two patient-attendants have been trained to give massage and simple exercise and to aid the physical therapist in giving electrical muscle tests.

No arbitrary plan of treatment has been set up, but rather a choice of two or three things is given, any one of which can be adapted to specific needs.

As stated in the beginning of this paper, we have made no conclusions yet. But it is the concerted opinion of the medical staff that the program is well worth continuing, since we are making a contribution to the rehabilitation of these patients having Hansen's disease.

Treatment of Poliomyelitis

Earl C. Elkins, M.D., Rochester, Minn. In KENTUCKY MEDICAL JOURNAL, 48:3:156, March 1950.

The concept of treatment of poliomyelitis is now fairly well established, although technic varies in minor ways. The major aim of active treatment of poliomyelitis is to salvage what remains of the function of the weak and paralyzed muscles. None of the treatments used, for example, supportive, physical, or orthopedic treatment, have any effect on the progress of the disease; nor can treatment change the already existing primary lesions in the central nervous system.

During the past decade, because of an apparent increase in incidence of the disease, and an undoubted increase in accuracy of diagnosis, interest in treatment has been augmented. It is evident, however, that not enough physicians in widely scattered, small hospitals

are prepared to organize and supervise treatment through all phases of the disease. In many epidemic areas, where emergency technical help has been allocated, this personnel has been expected to examine patients and to evaluate and prescribe treatment for the neuromuscular involvement in a large percentage of cases. Medical supervision often has been superficial and has consisted of irregular visits of a physician from a distant center.

The clinical phases of poliomyelitis usually are divided into three stages: acute, convalescent and chronic. In treatment of acute poliomyelitis, supportive measures are those used in any infectious disease. Emergency procedures, moreover, sometimes are necessary to save the patient's life. In this connection careful observation of the patient for respiratory difficulty is important.

Acute Stage

Physical Support—Measures should be taken, in cases in which paralysis is present, to provide proper support of the extremities and to maintain correct bodily alignment. Rigid supports may be used, but not as substitutes for good care.

Heat—The mechanism by which frequently-applied hot packs relieve the pain of poliomyelitis and cause muscular relaxation is not known. Neither is it known whether the moist heat of the hot pack has any advantage over other forms of heat. The method of applying packs has changed considerably. The meticulous procedure of applying hot packs to the various segments of the body is not as widely used now as previously. In the past several years, use has been made of the so-called prone pack, although the patient may be either prone or supine. At all events, in the majority of cases of poliomyelitis, if proper treatment is given, the pain, tenderness, and muscular tightness usually disappear in two to eight weeks. It should be recognized, however, that in many instances heat alone will not eradicate the muscular tightness.

Stretching—Passive stretching exercises, if carefully done following thermotherapy, are important. As the pain subsides, stretching can be continued until the muscle tends to remain supple and at full length. After the painful stage of the disease is past, the muscle apparently can be carefully but rather strenuously stretched, without danger of injury.

Stage of Convalescence

Treatment after the acute stage (fourteen to twenty-one days), in addition to attempting to relieve pain and muscular tightness, should have as its aim the establishment of coordinated muscular function. It is in this phase of treatment that the greatest strides have been made.

Training of patients to coordinate movements is done largely by stimulation, through careful passive motion, of proprioceptive nerve endings in the various muscles. Training periods are frequent and the muscles are pointed out to the patient. Passive motions are carefully guided, and active motions assist in establishing the coordinated patterns of movement.

Training of the patient in coordinated movements in such a manner that all groups of muscles function to the best advantage, and so that weak muscles are used and developed properly, requires special skill on the part of the physical therapist and careful observation and judgment on the part of the attending physician. Weeks or months may be required, and to decide whether maximal benefits have been reached may be difficult.

Muscular Strength—Methods used do not differ greatly from those which have been employed for many years. However, compared with former times, more emphasis has been placed on this training and it is carried on for a longer period. First, weak and paralyzed muscles are carefully and passively tugged to establish a proprioceptive sense. Then, as voluntary control returns, active exercise of individual muscles or of groups of muscles is instituted. The amount of exercise is increased as muscular power increases; that is, from movement with assistance, to movement with the force of gravity eliminated, and then to movement against both the force of gravity and resistance.

Activity—As muscular strength returns and coordinated motion is established, the activities of the patient are increased.

Rehabilitation—In training a patient who has extensive involvement, it is necessary to bear in mind that, in addition to trying to increase muscular strength and bringing about the best possible function of the remaining muscles, the patient must be physically rehabilitated to the greatest possible degree. Frequently, little or no guidance is given the patient relative to his future life. This is left to the family or to a social agency. The patient must be treated as a whole, as any severely handicapped patient is treated, and treatment can be considered a partial failure if this is not done. The patient's family, in most instances, cannot finish adequately the rehabilitation of the patient.

Chronic Stage

Poliomyelitis usually is considered to have become chronic after recovery from weakness or paralysis has ceased.

The final stage of treatment consists of (1) permanent use of orthopedic appliances, (2) correction of deformities and production of stabilization by surgical means.

Finally, treatment during the chronic stage—and the same is true of the convalescent stage—should be supervised from the beginning by a team of workers skilled in treatment of musculoskeletal disease in general, and of poliomyelitis in particular.

The late stages of poliomyelitis present an extremely variable problem: physical, social, and economic. Treatment must be highly individualized and adapted to the patient's needs.

America's Number One Problem—Chronic Disease and an Aging Population

H. A. Rusk. In AMERICAN JOURNAL OF PSYCHIATRY, 106:241, October 1949. Abstracted in JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 142:9:674, March 4, 1950.

Rusk shows that, as the population of the United States ages, the extent of physical disability increases. The Veterans Administration and some civilian hospitals have demonstrated that rehabilitation to the point of self-care and even to full or limited employment is possible for many of the chronically ill. Hospital programs alone are not enough; it is necessary to have a broad community program and to provide rehabilitation and work therapy in the institutions for the aged. How a community can meet the needs of persons with senile psychosis has been demonstrated in Vancouver, B. C. In New York City, the problems of the aged person living alone in a boarding home or room have been solved partially by the development of a number of community centers.

The Physical Therapy Department

Leigh T. Wedlick, M.R.C.P. (Lond.), Honorary Physical Therapist, Royal Melbourne Hospital, Melbourne, Australia. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 13:3:57, March 1950.

The physical therapy department should not be an isolated department; it is a vital link in the chain of hospital treatment, and it impinges not only on general medicine and surgery, but on all the specialties.

In the establishment of a physical therapy department I consider that the first essential is the appointment of a medical director.

The technicians who administer the actual treatments should be fully-trained physical therapists, working under the direction and close supervision of the medical director. The use of semi-trained technicians, or of nurses who are not fully acquainted with the technical side of the work, can only lead to bad results.

Electrophrenic Respiration

In BRITISH MEDICAL JOURNAL, 4650:426, February 18, 1950.

Artificial respiration can be given either by manual manipulation of the patient, by intermittent positive pressure, or by an "iron lung." Recently Sarnhoff and his co-workers have developed a new method which depends on intermittent stimulation of the phrenic nerve. In experiments on cats and dogs the nerve was exposed and a silver electrode applied, an indifferent electrode being placed anywhere on the skin. A Grass stimulator supplied faradic stimuli at a rate of 40 per minute. The current was fed through a rotating potentiometer which, in the course of each respiratory cycle, gradually increased the voltage to three volts and then suddenly reduced it. This stimulus gives a slow contraction of the diaphragm resembling the normal movement.

Reconstruction of the Deformed Arthritic Hand

Otto C. Kestler, M.D., New York. In ANNALS OF SURGERY, 131:2:218, February 1950.

This is a report of a multiple surgical procedure by which a deformed arthritic hand was reconstructed as a more useful part of the extremity. Functional and cosmetic improvement was obtained and probably a foundation for preventing further increase in deformity was laid down.

A procedure is presented by which a hand, seriously deformed and extremely painful due to rheumatoid arthritis, was satisfactorily reconstructed.

A deformed, functionally impaired thumb was reconstructed by complete dissection and shortening of the proximal phalanx. Fusion of the metacarpophalangeal joint was obtained and the distal phalanx could be reduced into its normal position. Useful active function could be maintained in this interphalangeal joint. The patient has been followed for fourteen months.

A case is reported in which proximal shifting of the metacarpal heads was performed on the second and third metacarpal bones of the right hand. Functional and cosmetic improvement was obtained and maintained for a period of fourteen months.

The merits of the two procedures—one which removed the metacarpal heads and the other which shifted the cartilaginous cups—are weighed and discussed.

Book Reviews

The Mental and Physical Effects of Pain. *By V. C. Medevi, M.D., M.R.C.P., Associate Chief Assistant, Endocrine Clinic, St. Bartholomew's Hospital, London. Backston Browne Prize Essay, Harveian Society of London, 1948. Paper. Price $1. Pp. 39. Published by Emil S. Livingstone, Ltd., 16 and 17 Teviot Place, Edinburgh, 1949. (Distributed by Williams and Wilkins.)*

This small monograph is a little gem—not that it adds any new concepts to this still little-understood problem, but rather, it is an excellent summary of what is known. The tremendous gaps in our knowledge of pain are shown, thus indicating the direction for further research. It is well for us, sometimes, to take stock of what has been accomplished and this monograph does this. Medicine owes the author a debt of gratitude for his painstaking presentation.

Medevi shows we still lack a definition of pain, so that Sir Thomas Lewis writes "reflection tells me that I am so far from being able satisfactorily to define pain, of which I here write, that the attempt would serve no useful purpose," and even Adrian talks around it. The author points out that the two facets of pain, the perception and the emotional, are the cause of so much confusion and of the difficulty in defining it. Medevi, tracing the theories of pain, states that by the end of the 19th Century there were three theories of pain: the intensive, and the sensory theory of the physiologists, both opposing the traditional emotional theory of the philosophers and psychologists. At the beginning of the 20th Century the sensory theory had been accepted.

There is an excellent discussion of the mental effects of pain. The mental effects are discussed in two main groups: the immediate mental effects accompanying pain, and the delayed effects. The mental effects of pain have a definite physiological foundation. And, as the author points out, higher vertebrates and man appear conscious of pain, and have a memory of their past experiences and apprehension of the future which causes psychological fear. True pain, says Medevi, does not necessarily arise out of the changes in the peripheral end organ, where it is felt, nor in the connecting nerve tracts, but in the body perception activities of the cerebral cortex. In this manner the pain memory of the phantom limb is explained. He also discusses the raising of the pain threshold through auto-suggestion as for instance in Reed's method for childbirth.

A final section is devoted to the physical effects of pain. Referred and segmental pain is thoroughly discussed. As the arrangement of pain fibers in the spinal cord, in the brain-stem, and in the thalamus is segmental, it is very plausible to assume that pain impulses coming from the same segment will link up with a related area of the sensory center, and reach consciousness with the help of the body image in the cortex, in order to be localized eventually and selectively in that segment.

The monograph closes with an excellent bibliography. This small volume is highly recommended to anyone dealing with patients as well as to those who wish to understand fully our present concepts of pain.

Mobilization of the Human Body. *Harvey E. Billig, Jr., M.D., and Evelyn Lorwendahl. $2.00. Stanford University Press, Stanford, California.*

This book is based on the premise that correction of posture is dependent upon mobility of the segments of the body. The factors of mobility, the fascial ligamentous bands, and their attachments are discussed, along with tests which indicate the sources of immobility and stiffness.

Symptoms and complaints associated with excessive stiffness are examined. Shortening of the ligaments, the authors point out, makes it impossible to realign the segments without first having undergone a program of mobilization. Lengthening of the ligaments makes for correction of the poor alignment and relieves compression on peripheral nerves.

A detailed program of mobilization is presented with complete description of technics for all parts of the body. The description is supplemented by excellent photographs.

There is a chapter which stresses the value and necessity of coordination in the development of mobility with some suggestions for a rhythmic training program.

Basic neuromuscular patterns are discussed and it is pointed out that development of power and endurance are necessary adjuncts to the achievement of good body mechanics and correct posture training. However, the authors believe that all those factors are of no avail if the basic concept of mobility is overlooked.

The authors have presented an important part of the problem of correction of posture and technics that are of special interest to physical therapists. But some other factors of this problem are not mentioned and this omission could be misleading. It must be kept in mind that the value of this book is its emphasis on mobility and the method of attaining, and not as a complete treatise of posture correction.

Proceedings of the First Annual Symposium on Orthopedic Appliances. *Edited by A. S. Glushien, M.D., Veterans Administration Hospital, Aspinwall; W. A. Hamor, Sc.D., Assistant Director, Mellon Institute; H. E. Weaver, Ph.D., Senior Fellow, Mellon Institute; G. H. Young, Ph.D., Assistant Director, Mellon Institute. Paper. Price $3.00. Pp. 308 with 135 illustrations. Orthopedic Appliance and Limb Manufacturers Association, 336 Washington Building, Washington, D. C. in cooperation with the Sarah Mellon Scaife Foundation, 1950.*

In an effort to bring about better cooperation and understanding in the brace-making field a conference was held at Mellon Institute, Pittsburgh, Pennsylvania, September 20-26, 1948. The meeting was held under the joint auspices of the Department of Orthopedic Surgery of the University of Pittsburgh's School of Medicine, and the Multiple Fellowship on Orthopedic Appliances sustained at Mellon Institute by the Sarah Mellon Scaife Foundation.

Formal attendance was restricted to an invited group of sixty-five experienced brace-makers. Orthopedic surgeons, physicians, physical therapists and other workers with physically-handicapped persons were also in attendance as auditors.

The lectures were within the following areas: "anatomy, the problems of support by braces including the design, construction, and fitting of braces, and engineering considerations as applied to design, selection of materials and utilization of technological developments from other fields." The lectures were given by medical specialists, orthopedists, scientists and engineers.

This publication is based on a stenotype record of the lectures and discussions at this symposium. It is done in lithograph. Unfortunately the binding and stapling are of such poor quality that it does not withstand use.

The need for better knowledge, understanding and cooperation between the groups interested in providing proper braces for patients is recognized by the lecturers. Those who made this symposium possible are to be commended for making an effort to improve the brace-making situation. Physical therapists will find this treatise interesting and informative.

A Textbook of Neuropathology, *with clinical, anatomical and technical supplements. Ben W. Lieberstein, B.S., M.S., M.D. Pp. 474. W. B. Saunders Company, Philadelphia, 1949.*

There are many textbooks of neuropathology and the addition of another, in order to be well received, must have something special to offer. Some are small and didactic for the use of students and confine themselves strictly to pathology so that they require considerable clinical experience to be able to understand them. Others are in the category of reference works which are far beyond the use of anyone but the experienced neuropathologist. In this book, the author has achieved the pleasant correlation of just enough clinical neurology to make the pathology understandable and even palatable to the student.

It follows the usual formal lines of any text in neuropathology. The early chapters, dealing with the general problems of terminology, methodology, and pathogenesis, give a simple presentation of the fundamental concepts of pathologic changes in nervous tissue. Subsequent chapters cover the various disease groups such as degeneration, inflammation, vascular disorders, neoplasms, etc. There is a chapter entitled "Malformations of the Nervous System and Its Coverings" which discusses in one group the common anomalies encountered. This represents some of the original writings of the author and is a valuable presentation. The chapter entitled "Syndromes, Paralyses and Uncommon Diseases" is a list of definitions of syndromes commonly encountered in neurology and should help to enlighten the confusion created by such terms in the literature. The author has included a section on anatomy which he calls the "Neuroanatomical Supplement." It is a sketchy discussion of gross anatomy. Although the chapter is well done it is difficult to believe that anyone reading a text in neuropathology will not already have a command of the simple facts presented.

Each entity that is discussed is presented logically. The definition and simple presentation of clinical facts leave no doubt as to what is being considered. The pathology is described in a straightforward manner without the confusions introduced by reference to unusual variations and ancient literature. In fact, if there is any criticism at all, it can be that the author is a little too dogmatic. However, this is a minor fault. There are many illustrations and they are all excellent with clear labeling. Finally, each chapter is ended with a bibliography which is extensive and well-chosen.

This is one of the most useful textbooks in neuropathology from the point of view of the student or average clinician. It can be recommended without reservation.

Meet Our New Contributors

BenDuce, Mary L., Captain, Women's Medical Specialist Corps, 98th General Hospital, A.P.O. 407, New York. Captain BenDuce is at present serving as a supervising physical therapist in the European Command. Her home is in Fort Wayne, Indiana. She received a Bachelor's Degree from Oberlin College, and was trained in physical therapy at Walter Reed General Hospital in 1936. Since that time she has served in numerous Army and Navy general hospitals. She is a member of the American Physical Therapy Association.

Huppert, Curtis H., Research Physical Therapist, New York University College of Engineering, Prosthetic Devices Study, New York City. Mr. Huppert attended the Medical School of the University of Vienna, was graduated from New York University School of Education with a B.S. degree in 1949, and received his Master's Degree at the same university this year. He was trained as a physical therapist at the Hospital for Special Surgery, New York City, in 1942. Since 1946, and until recently, Mr. Huppert has been Chief of the Physical Therapy Department at the Halloran Veterans Administration Hospital, Staten Island, New York. He has also been Chief of Electroencephalography at Halloran, and has worked as a physical therapist at a number of New York hospitals. Mr. Huppert is a member of the American Physical Therapy Association, the American Registry of Physical Therapy Technicians, the Association for Mental and Physical Health, and the Electroencephalography Society of New York.

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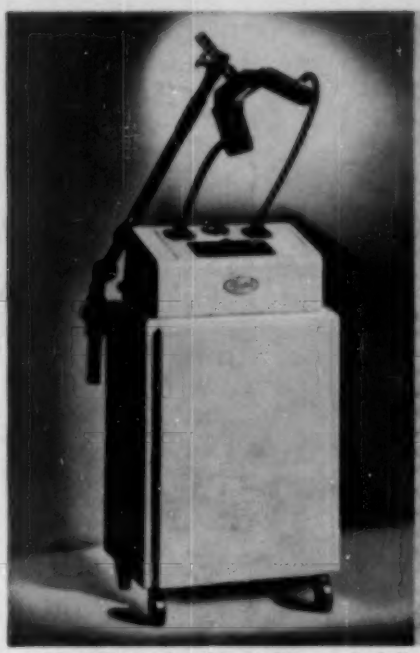

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